



Land Rear of 96 Folders Lane
Burgess Hill, West Sussex, RH15 0DX

Air Quality Damage Costs Assessment and Emissions Mitigation Report

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Client:
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For Information

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1.0 INTRODUCTION

1.1 Conditional planning permission for the development of 40 dwellings on land to the rear of 96 Folders Lane was granted by Mid Sussex District Council (MDC) on 29 April 2025 (MDC reference: DM/23/0532).

1.2 Condition 9 of the permission requires that:

"Prior to the commencement of any residential part of the development hereby permitted, the details of a scheme of mitigation measures to improve air quality relating to the development shall be submitted and approved in writing by the Local Planning Authority. The scheme be in accordance with, and to a value derived in accordance with, the Air quality and emissions mitigation guidance for Sussex which is current at the time of the reserved matters application. All works which form part of the approved scheme shall be completed before any part of the development is occupied and shall thereafter be maintained in accordance with the approved details."

1.3 Condition 7 of the permissions requires that:

"No development shall take place, including any works of site clearance, until a Construction Management Plan has been submitted to and approved in writing by the Local Planning Authority. Thereafter the approved Plan shall be implemented and adhered to throughout the entire construction period. The Plan shall include, and not be restricted to, the following matters;

.....

(i) measures to control the emission of dust and dirt during demolition and construction...."

1.4 Quantum Air has been commissioned by Jones Homes (Southern) Limited to prepare this "Air Quality Damage Cost Assessment and Emissions Mitigation Report" to assist with the discharge Condition 9 and provide mitigation advice in relation to dust emissions during the construction phase of the project (which will assist with the finalization of the control of dust emissions, as required under bullet point (i) of Condition 7).

1.5 This report is structured as follows:

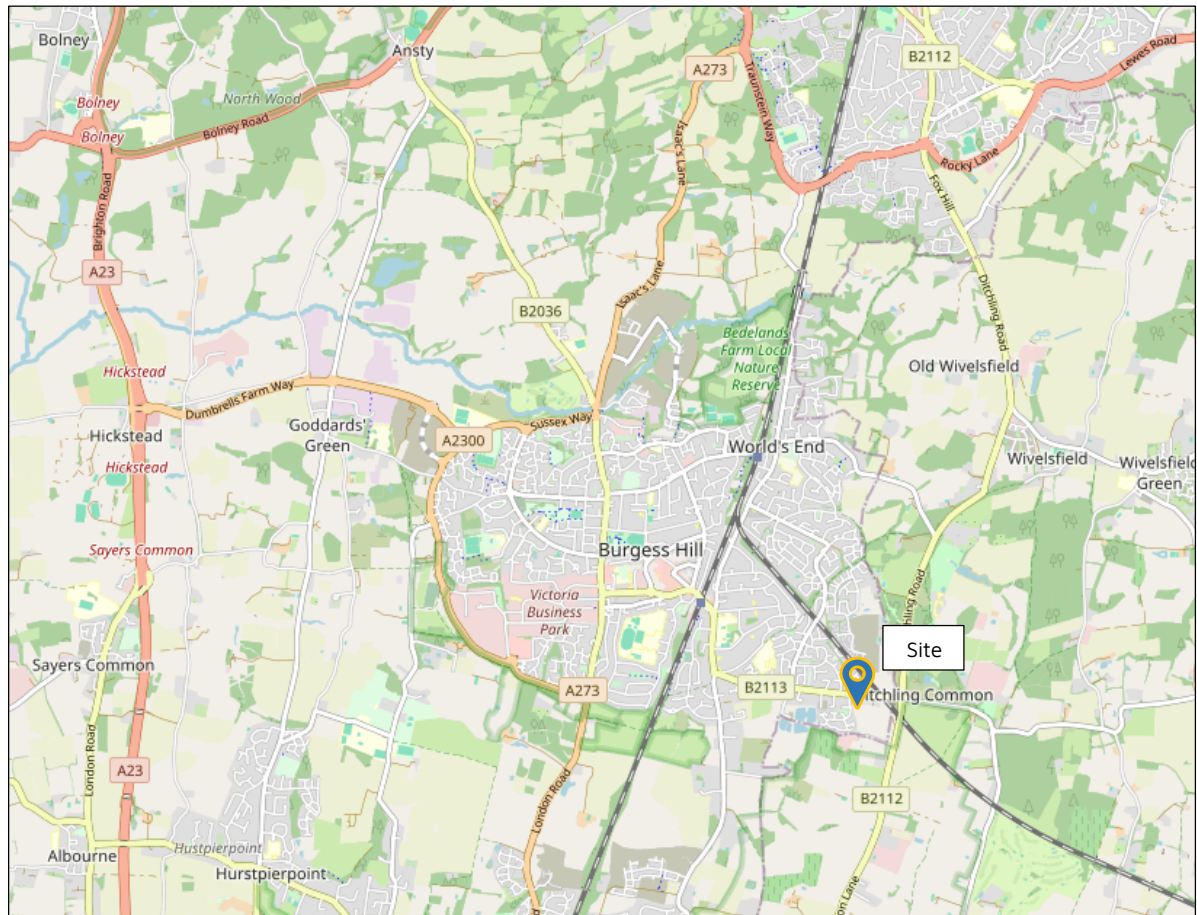
- Section 2 provides a description of the site;
- Section 3 describes the proposed works;
- Section 4 outlines the relevant legislation, planning policy and design guidance used in the report;

- Section 5 presents the calculation of the total health damage cost associated with the permitted development, along with proposed mitigation measures, in accordance with the Sussex Air Partnership's "*Air Quality and Emissions Mitigation Guidance for Sussex (2021)*";
- Section 6 evaluates the potential impacts of construction dust and outlines corresponding mitigation strategies in line with The Institute of Air Quality "*Guidance on the Assessment of Dust from Demolition and Construction*" (January 2024); and
- Conclusions are presented in Section 7.

2.0 SITE DESCRIPTION

- 2.1 The site is located to the south of Folders Lane on the outskirts of Burgess Hill, as shown in Figure 2.1 below.

Figure 2.1: Site Location Plan (© OpenStreetMap Contributors,2024)

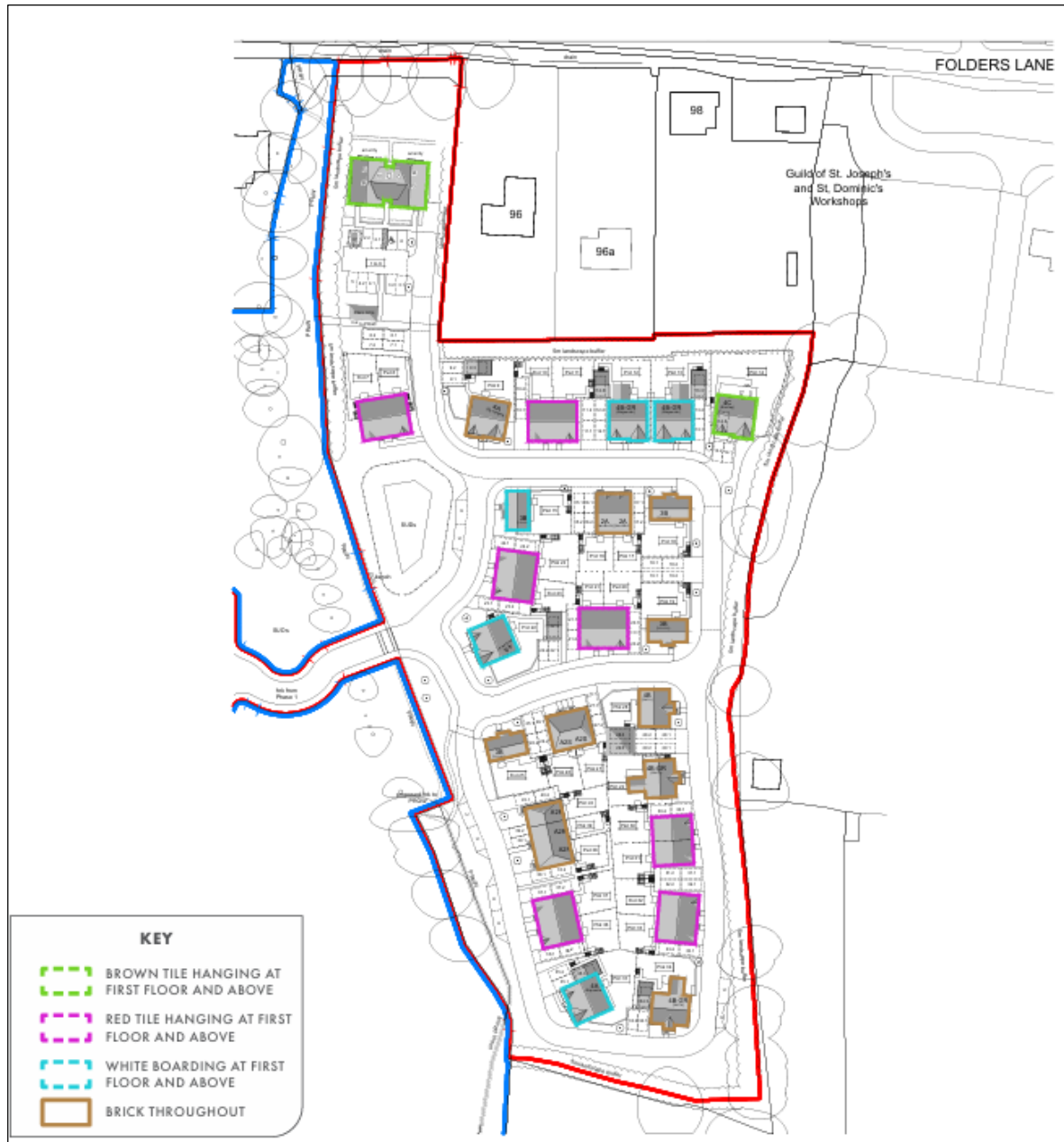


- 2.2 Whilst the site is located close to neighbouring rural areas, for the purpose of the assessments presented in this report the site has been taken to be in an “urban” location.

3.0 PERMITTED DEVELOPMENT

- 3.1 The permitted development includes the development of 40 new high-quality homes, as shown in Figure 3.1 below.

Figure 3.1: General Arrangement of Permitted Development



4.0 LEGISLATION AND PLANNING POLICY CONTEXT

Legislation

The Environment Act 1995

- 4.1 Part IV of the Environment Act 1995 (as amended) requires the UK Government to publish an "Air Quality Strategy" (AQS) every five years. The AQS is required to set out air quality standards, objectives and measures for improving ambient air quality within the UK. In addition to the protection of human health, the AQS must also set standards and objectives for the protection of vegetation and ecosystems.
- 4.2 The Act also sets out requirements for the Local Air Quality Management (LAQM) regime, which imposes duties on Local Authorities to regularly review and assess air quality within its area.

The Air Quality (England) Regulations 2000 (as amended)

- 4.3 The Air Quality (England) Regulations 2000 set out quantitative Air Quality Objectives (AQO's) for England. Pollutants covered include benzene, 1,3-butadiene, carbon monoxide, lead, nitrogen dioxide particulate matter (PM10) and sulphur dioxide.
- 4.4 The Air Quality (England) (Amendment) Regulations 2002 introduced amended AQO's for benzene and carbon monoxide.
- 4.5 All Air Quality Objectives (AQO's) objectives include compliance dates, taking account of the economic considerations, practicability and technical feasibility of their delivery.
- 4.6 AQO's apply at locations where members of the public are regularly present. Where any of the prescribed AQO's are not likely to be achieved within any part of a Local Authority's area, the authority concerned must designate that part of its area as an "Air Quality Management Area" (AQMA). An action plan covering the designated area will then have to be prepared setting out how the authority intends to exercise its powers in relation to the designated area in pursuit of the achievement of the prescribed AQO's.

Air Quality Standards Regulations (2010) (as amended)

- 4.7 The Air Quality Standards Regulations 2010 transpose AQO's defined in EU Ambient Air Quality Directive (2008/50/EC) and the Fourth Daughter Directive (2004/107/EC) into UK legislation.
- 4.8 The Air Quality Standards (Amendment) Regulations 2016 amend the 2010 Regulations, including updated definitions for Directive 2008/50/EC and Directive 2004/107/EC: adjustments to the criteria for the location and operation of air quality monitoring stations and new requirements for documents and reviewing the selection of monitoring sites.

Conservation of Habitats and Species Regulations 2017 (as amended)

- 4.9 The Conservation of Habitats and Species Regulations (as amended) are a key piece of UK Legislation aimed at conserving biodiversity by protecting habitats and species. The Regulations essentially transpose the requirements of EU Wild Birds Directive (2009/147/2009) and EU Habitats Directive (92/43/EEC).
- 4.10 The Regulations require the designation of protected habitats sites, protection of listed species and ensuring that any project that might have a significant adverse effect on a protected site is appropriately assessed and, if required, effects mitigated.
- 4.11 The Regulations were amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 to ensure the continued effectiveness of the 2017 Regulations, but transferring responsibilities previously held by EU Institutions to UK bodies and other legal and practical continuity updates.

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

- 4.12 The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020 were introduced to address minor errors and ensure the continued effectiveness of environmental laws in the UK post-Brexit.
- 4.13 4.14. The most significant amendment was to the AQO for PM_{2.5}, to ensure that this aligned with the UK's air quality objectives.

Environment Act 2021

- 4.14 The Environment Act 2021 introduces several significant measures aimed at improving air quality management in the UK, including:
- 4.15 The setting of short-term and long-term air quality targets. Of particular note, is a legally binding target for reducing fine particulate matter (PM_{2.5}) in ambient air;
- 4.16 A requirement for the Secretary of State to review the air quality strategy at least every five years and produce an annual report to Parliament on progress towards meeting air quality objectives;
- 4.17 Enhancing the LAQM framework requiring greater cooperation between local authorities and other relevant public bodies to improve air quality;
- A requirement for Local Authorities to declare Air Quality Management Areas (AQMA's) within 12 months of identifying an exceedance of air quality objectives and produce an Air Quality Action Plan within 18 months;

- Amendments to the Clean Air Act 1993 to allow local authorities to impose civil penalties for breaches in smoke control areas, replacing the existing criminal offence. This specifically aims to reduce PM_{2.5} emissions from domestic stoves and fires;
- Creating power for the recall of vehicles and engines that do not meet environmental standards, including air emissions standards; and
- Designating National Highways as a "*Relevant Public Authority*" and creating a legal requirement for it to work with local authorities to meet air quality standards and objectives on road networks.

Environmental Targets (Fine Particulate Matter) (England) Regulations 2023

- 4.18 These Regulations set out specific targets for the reduction of fine particulate matter (PM_{2.5}). Key targets include:
- 4.19 A requirement to reduce the annual mean concentration of PM_{2.5} to 10 µg/m³ nationwide by 2040, with an interim target of 12 µg/m³ to be achieved by January 2028; and
- 4.20 A 35% reduction in average population exposure to PM_{2.5} by 2040, with an interim target of a 22% reduction by January 2028 (both compared to 2018 baseline concentrations).
- 4.21 These new targets have been imposed to drive reductions in the worst PM_{2.5} hotspots across the country, whilst ensuring an overall nationwide improvement in air quality.

Environmental Protection Act 1990

- 4.22 Construction works may give rise to dust emissions, including coarse (PM₁₀) and fine (PM_{2.5}) particulate matter. The unreasonable exposure of individuals to dust is a matter that can be directly enforced through the provision of the Environmental Protection Act 1990, where it is held that such emissions constitute a "statutory nuisance". For the purposes of the regulations, statutory nuisances related to air quality matters include:
- "...b - smoke emitted from premises so as to be prejudicial to health or a nuisance.
 - c - fumes or gases emitted from premises so as to be prejudicial to health or a nuisance.
 - d - any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance..."
- 4.23 Section 79 of the Act requires that, where a complaint regarding air quality matters falling within the remit of the Act is made by a person living within its area, a Local Authority must take reasonably practicable steps to investigate the complaint. There are no numerical thresholds which define "acceptability", however, where the Local Authority is satisfied that a statutory

nuisance exists (or could occur), it is required to service an "Abatement Notice" under Section 80 of the Act (subject to a period of seven days when alternative steps for the abatement of the nuisance can be explored).

- 4.24 Section 82 of the Act gives an aggrieved individual the power to apply directly to a Magistrates Court to seek an order for the abatement of an alleged nuisance.

Governmental Air Quality Policies and Strategies

Air Quality Plan for Nitrogen Dioxide (NO₂) in the UK (2017)

- 4.25 The Air Quality Plan for Nitrogen Dioxide (NO₂) in the UK outlines the government's strategy to reduce roadside NO₂ concentrations and meet statutory air quality limits. Key objectives include:

- Reducing NO₂ emissions from vehicles, particularly diesel cars;
- Requiring local authorities to develop and implement measures to achieve compliance with NO₂ limits in the shortest possible time;
- Promotes the adoption of cleaner transport options, such as electric vehicles and public transportation;
- The implementation of enhanced monitoring and reporting mechanisms to track progress and ensure transparency.
- To protect public health, particularly in urban areas where pollution levels are highest.

Clean Air Strategy (2019)

- 4.26 DEFRA published its "*Clean Air Strategy*" in 2019 to tackle air pollution comprehensively across the UK. Key objectives include:

- Reducing exposure of harmful pollutants, most particularly fine particulate matter (PM_{2.5}) and nitrogen dioxide (NO₂);
- Reducing pollutant emissions from transport, industry, agriculture and domestic heating;
- Promoting the development and adoption of environmentally cleaner technologies and practices to support economic growth;
- Reducing the impact of air pollution on the natural environment, including ecosystems and biodiversity; and
- Improving the monitoring and reporting of air quality to promote transparency and accountability in progress towards cleaner air.

Environment Improvement Plan (2023)

4.27 DEFRA's "*Environment Improvement Plan 2023*" is the first revision of the UK's Government's "*25 Year Environment Plan*" and sets out a detailed roadmap to enhance the natural environment in England. It builds on the Clean Air Strategy 2019, promoting the following key objectives:

- Limiting declines in biodiversity by creating and restoring wildlife habitats;
- Improving air and water quality, reducing pollution, and managing exposure to chemicals and pesticides.
- Promoting a circular economy to maximise resource efficiency and minimising waste
- Mitigating and adapting to climate change through sustainable practices and green finance initiatives.
- Boosting "green" jobs and support farmers in adopting nature-friendly practices.

Air Quality Strategy (2023)

4.28 The latest "*Air Quality Strategy*" was published by DEFRA in April 2023. The strategy aims to improve air quality across England by setting out a comprehensive framework for local authorities. Key objectives include:

- Achieving long term air quality goals, including ambitious targets in relation to fine particulate matter (PM_{2.5}).
- Providing guidance and tools to help local councils effectively use their powers to reduce pollution and improve air quality;
- A focus on the reduction of emissions from industrial sources, domestic burning and transportation, including the stricter enforcement of environmental permits and promoting cleaner fuels;
- Promoting training, guidance and knowledge sharing among local authorities to ensure they are equipped to tackle air quality issues.

4.29 As noted earlier, this report seeks to present an air quality assessment for the proposed development.. When considering the potential significance of pollution from demolition, construction and construction traffic, the principal pollutants of concern are nitrogen dioxide (NO₂) and particulate matter of size 10 and 2.5 microns (PM₁₀ and PM_{2.5}). Relevant Air Quality Objectives for these pollutants set out in the AQS are summarised in Table overleaf.

Table 4.1: Air Quality Objectives in the UK

Pollutant	Concentration	Measured As	Date to be achieved by (and maintained thereafter)
Nitrogen Dioxide (NO ₂)	200 µg/m ³	1-hour mean not to be exceeded more than 18 times per year	31/12/2005
	40 µg/m ³	Annual mean	31/12/2005
Particles (PM ₁₀)	50 µg/m ³	24-hour mean not to be exceeded more than 35 times per year	31/12/2004
	40 µg/m ³	Annual mean	31/12/2004
Particles (PM _{2.5})	20 µg/m ³	Annual mean	2020
	Target of 15% reduction in concentrations at urban background		Between 2010 and 2020
	12 µg/m ³	Interim annual mean target to be achieved by 2028	2028*
	Target of 22% reduction in average population exposure		
	10 µg/m ³	Legally binding nationwide annual mean target to be achieved by 2040	2040**
	Target of 35% reduction in average population exposure		

*Note: Interim PM_{2.5} targets are to be achieved by 2028.

*Note: Legally binding PM_{2.5} targets are to be achieved by 2040.

National Planning Policy

National Planning Policy Framework

4.30 The latest version of the NPPF was published in December 2024. The overall environmental objective of national planning policy is *"to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."*

4.31 Section 9 promotes sustainable transport. In relation to air quality, paragraph 109 states that:

"Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:...

...

e) identifying and pursuing opportunities to promote walking, cycling and public transport use; and

f) identifying, assessing and taking into account the environmental impacts of traffic and transport infrastructure – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains."

Additionally, paragraph 110 states:

"The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health...."

4.32 Section 15 'Conserving and enhancing the natural environment' sets out the following policy requirements in relation to air quality:

4.33 Paragraph 187:

"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 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;..."

4.34 Paragraph 198:

"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..."

4.35 Paragraph 199:

"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."

4.36 In relation to the decision-making process, paragraph 56 and 57 of the NPPF states:

"Local planning authorities should consider whether otherwise unacceptable development could be made acceptable through the use of conditions or planning obligations. Planning obligations should only be used where it is not possible to address unacceptable impacts through a planning condition."

"Planning conditions should be kept to a minimum and only imposed where they are necessary, relevant to planning and to the development to be permitted, enforceable, precise and reasonable in all other respects...."

Planning Practice Guidance – Air Quality

4.37 The Planning Practice Guidance (PPG) is used to support the National Planning Policy Framework and is published online. The guidance on air quality was originally published in 2014 and updated in November 2019. The PPG provides various principles on how planning can take account of the impact of new development on air quality. Relevant guidance includes:

4.38 Paragraph 001 Reference ID : 32-001-2019110 sets out what air quality considerations the planning regime need to address. This includes references to relevant legislation, government policy, guidance, datasets and tools which can be utilised when assessing Air Quality.

4.39 Paragraph 002 Reference ID : 32-002-20191101:

"What is the role of plan-making with regard to air quality?

It is important to take into account air quality management areas, Clean Air Zones, and other areas including sensitive habitats or designated sites of importance for biodiversity where there could be specific requirements or limitations on new development because of air quality".

4.40 Paragraph 005 Reference ID : 32-005-20191101:

"When could air quality consideration be relevant to the development management process?

Whether 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 have an adverse effect on air quality in areas where it is already known to be poor, particularly if it could affect the implementation of air quality strategies and action plans and/or breach legal obligations (including those relating to the conservation of habitats and species). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity.

Where air quality is a relevant consideration the local planning authority may need to establish:

- the 'baseline' local air quality, including what would happen to air quality in the absence of the development;*
- whether the proposed development could significantly change air quality during the construction and operational phases (and the consequences of this for public health and biodiversity); and*
- whether occupiers or users of the development could experience poor living conditions or health due to poor air quality..."*

4.41 Paragraph 006 Reference ID : 32-006-20191101:

"What specific issues may need to be considered when assessing air quality impacts?

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

- Lead to changes (including any potential reductions) in vehicle-related emissions in the immediate vicinity of the proposed development or further afield. This could be through the provision of electric vehicle charging infrastructure; altering the level of traffic congestion; significantly changing traffic volumes, vehicle speeds or both; or significantly altering the traffic composition on local roads. Other matters to consider include whether the proposal involves the development of a bus station, coach or*

lorry park; could add to turnover in a large car park; or involve construction sites that would generate large Heavy Goods Vehicle flows over a period of a year or more;

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

4.42 Paragraph 007 Reference ID : 32-007-20191101:

"How detailed does an air quality assessment need to be?"

Assessments need to be proportionate to the nature and scale of development proposed and the potential impacts (taking into account existing air quality conditions", and because of this are likely to be locationally specific)...".

4.43 Paragraph 008 Reference ID : 32-008-20191101:

"How can an impact on air quality be mitigated?"

"Mitigation option will need to be locationally specific, will depend on the proposed development and need to be proportionate to the likely impact. It is important that local planning authorities work with the applicants to consider appropriate mitigation so as to ensure new development is appropriate for its location and unacceptable risks are prevented..."

Local Planning Policy for MDC

4.44 The MDC adopted the Mid Sussex District Plan 2014-2031 in March 2018. The adopted District Plan set the vision and strategy, with accompanying site allocations and policies to achieve the vision and strategy council. The updated plan 2021 – 2039 (MDC Plan, 2023) comprises of strategy, site allocations and policies which will supersede the 2018 District Plan upon its adoption.

4.45 Policies relevant to air quality and pollution include:

DPN6: Pollution

- *Development must not cause or be adversely affected by pollution or hazards, including air, noise, vibration, light, water, soil, odour, dust or other pollutants, which significantly adversely impact on people, including health and quality of life, and the natural environment, including nature conservation sites. Mitigation measures may need to be implemented for development that is likely to increase levels of pollution or hazards, considering any cumulative impacts.*
- *Pollution prevention practices must be adopted during construction activities. Where relevant, development proposals should produce a Construction Environment Management Plan identifying how general and site-specific risks will be managed to avoid environmental harm. Development proposals will need to consider the Council's published guidance (Sussex-air, 2021).*

DPN9: Air Quality

- *People's health and quality of life and the natural environment will be protected from unacceptable levels of poor air quality.*
- *The use of active and sustainable travel measures and green infrastructure to reduce pollution concentrations and exposure is encouraged.*
- *Development proposals will need to consider the Council's air quality guidance.*
- *The Council will require applicants to demonstrate that there is not an unacceptable impact on air quality. The development must minimise any air quality impacts, including cumulative impacts from committed developments, both during the construction process and lifetime of the completed development, either through a redesign of the development proposal or, where this is not possible or sufficient, through appropriate mitigation.*

- *Where sensitive development is proposed in areas of existing poor air quality and/or where major development is proposed, including the development types set out in the Council's current guidance (Air Quality and Emissions Mitigation Guidance for Sussex (2021 or as updated)) an air quality assessment will be required.*
- *Development proposals that are likely to have an impact on local air quality, including those in or within relevant proximity to existing or candidate Air Quality Management Areas (AQMA's) or designated nature conservation areas sensitive to changes in air quality, will need to demonstrate that measures and/or mitigation are incorporated into the design to minimise any impacts associated with air quality.*
- *Mitigation measures will need to demonstrate how the proposal would make a positive contribution towards the aims of the Council's Air Quality Action Plan where it is relevant and be consistent with the Council's current guidance as stated above.*
- *Mitigation measures will be secured either through a negotiation on a scheme, or via the use of planning condition and/or planning obligation depending on the scale and nature of the development and its associated impacts on air quality.*

Non-Regulatory Thresholds

- 4.46 The World Health Organization (WHO) released its "Air Quality Guidelines Global Update" in 2005, which was published in 2006. The update included "Air Quality Guidelines" (AQG's) to reduce public health impacts from the adverse effects of air pollution including health impacts such as respiratory and cardiovascular diseases and premature death.
- 4.47 The guidelines were updated in 2021, in response to more recent epidemiological studies which indicate adverse effects at lower levels than had previously observed. In recognition of the difficulty of meeting the AQGs in many jurisdictions, the WHO guidance also proposed a series of Interim Targets (IT's) which represent steps towards achieving the AQG's.
- 4.48 The AQG's are set out in the table overleaf.

Table 4.2: WHO Guidelines and Interim Targets

Pollutant	Time Period	Interim Target Level, $\mu\text{g}/\text{m}^3$				Air Quality Guideline Level, $\mu\text{g}/\text{m}^3$
		1	2	3	4	
Nitrogen Dioxide NO_2	1-hour mean	-	-	-	-	200
	24-hour mean	120	50	-	-	25
	Annual mean	40	30	20	-	10
Particulate Matter PM_{10}	24-hour mean	150	100	75	50	45
	Annual mean	70	50	30	20	15
Particulate Matter $\text{PM}_{2.5}$	24-hour mean	75	50	37.5	25	15
	Annual mean	35	25	15	10	5

4.49 It is important to note that the AQG's and IT's do not represent legally binding values for England. The legal requirements for the UK are set out in relevant legislation and accompanying governmental Air Quality Strategy. The WHO values do have provide aspirational non-statutory benchmark reference values against which air quality impacts can be assessed.

5.0 AIR QUALITY DAMAGE COSTS & MITIGATION ASSESSMENT

- 5.1 An assessment of the air quality damage costs and mitigation of these costs has been undertaken in accordance with Sussex Air Partnership's "Air Quality and Emissions Mitigation Guidance for Sussex (2021)".
- 5.2 In essence, this guidance requires:
- The additional transport emissions associated with the development to be calculated; and
 - The appropriate level of mitigation required to help avoid, minimise and/or off-set the impact on air quality to be determined.

Calculation of Additional Transport Emissions

- 5.3 Additional transport emissions have been calculated using DEFRA's "Emissions Factor Toolkit v13.1, 2025"¹.
- 5.4 Calculations have been undertaken to determine the annual emissions of:
- Oxides of nitrogen (NO_x); and
 - Particulate matter less than 2.5µm in diameter (PM_{2.5}).
- 5.5 Input values and assumptions used in the calculations are set out in Table 5.1 below.

Table 5.1: Total Exposure Damage Cost of the Development

Parameter	Value	Note
Daily traffic (AADT)	205	1
%HGV	0	2
Average Speed (km/h)	50	3
Average Trip Length (km)	10	4
Road Type	Urban (not London)	5
Gradient (%)	0	6
Flow Direction	Two Way Flow	7
HGV Load (%)	0	8
Opening Year	2027	9

¹ <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/emissions-factors-toolkit/>

Notes:

- 1 The Transport Statement accompanying the application indicates the development would generate a 12 hour (07.00 to 19.00 hour) flow of 183 vehicles. Based on typical diurnal fluctuation in traffic flows, an AADT (24 hour) traffic flow of 205 vehicles has been assumed.
- 2 All movements generated by the development are assumed to be cars/vans.
- 3 An average traffic speed of 50km/hour has been assumed, in line with Sussex Air Quality Partnership guidance.
- 4 Average trip length of 10km assumed, in accordance with national average determined from National Travel Survey (NTS).
- 5 Whilst located towards the outskirts of Burgess Hill town centre, the site is assumed to be sited within an urban location.
- 6 Road gradients are not known and this a gradient of 0 is assumed.
- 7 Two way traffic is assumed
- 8 No HGV's are assumed to be generated by the development and HGV load has therefore been set at 0.
- 9 An opening year of 2027 has been assumed. The assessment therefore assesses potential damage for the five year period between 2027 and 2031.

5.6 Based on the above, the following annual transport emissions are calculated.

Table 5.2: Total Exposure Damage Cost of the Development

Year	2027	2028	2029	2030	2031
Emissions Per Year (kg/yr)					
NO _x	109.29	94.83	81.28	68.96	58.16
PM _{2.5}	13.00	12.78	12.59	12.42	12.28
Emissions per Year (tonnes/year)					
NO _x	0.109	0.095	0.081	0.069	0.058
PM _{2.5}	0.013	0.013	0.013	0.012	0.012

Central Damage Costs

- 5.7 Damage costs have been determined using the DEFRA IGBC Damage Cost Appraisal Toolkit².
- 5.8 A baseline year of 2027 has been adopted (corresponding the likely year of opening and introduction of additional vehicle movements generated by the development onto the local road network).
- 5.9 The following central value damage costs have been used (based on the assumed opening year of 2027):
- Central damage cost for NO_x: £12,716/tonne
 - Central damage cost for PM_{2.5}: £92,026/tonne

Exposure Costs

- 5.10 Based on the calculated additional traffic emissions and central damage costs outlined above, the following annual exposure costs and total exposure cost for the period 2027 to 2031 are calculated.

Table 5.3: Calculated Exposure Damage Costs

Year	Annual Exposure Costs (£)				
	2027	2028	2029	2030	2031
NO _x	1390	1206	1034	877	740
PM _{2.5}	1196	1176	1158	1143	1130
Total Exposure Cost for Five-Year Period (2027 to 2031): £11,050					

- 5.11 Based on the above, the total five-year damage cost is calculated to be £11,050.

Mitigation

EV Charging

- 5.12 West Sussex County Council's *"Guidance on Parking at New Development"* (September 2020) requires that:

² <https://www.gov.uk/government/publications/assess-the-impact-of-air-quality>

"Active" charging points for electric vehicles should be provided at a minimum of 20% of all parking spaces with ducting provided at all remaining spaces where appropriate to provide "passive" provision for these spaces to be upgraded in the future".

5.13 This guidance does, however, pre-date the enactment of Approved Document S "Infrastructure for the Charging of Electric Vehicles" of the Building Regulations 2010, as amended.

5.14 Requirement S1 of the Approved Document S requires:

- (1) *A new residential building with associated parking must have access to electric vehicle charge points as provided for in paragraph (2)*
- (2) *The number of associated parking spaces which have access to electric vehicle charge points must be-*
 - a) *The total number of associated parking spaces, where there are fewer associated parking spaces than there are dwellings contained in the residential building;*
 - b) *The number of associated parking spaces is equal to the total number of dwellings contained in the residential building, where there are the same number of associated parking spaces, as, or more associated parking spaces than, there are dwellings...."*

5.15 Given that all dwellings to be created by the development will benefit from one or more associated parking spaces, compliance with ADS will require the provision of an EV charging point to all dwellings (i.e. a minimum of 40 electric charging points).

5.16 All electric vehicle charge points have been specified as BG Sync EV's "EVS7G". Manufacturer's data for these is attached at Appendix A. The installation cost of each EV charging point is £387.45. The provision of EV charging points to each dwelling would therefore represent a cost benefit of:

$$40 \times £387.45 = £15,498$$

5.17 It follows that the installation of EV charging points should, of itself, entirely offset the total damage cost associated with additional transport emissions. Notwithstanding this conclusion, the permitted development also includes the following additional air quality mitigation measures.

Air Source Heat Pumps

5.18 As highlighted in the energy statement submitted with the planning application, heating to all houses will be provided for by means of air source heat pumps (ASHP's), whilst 6 no. apartments will have ASHP for hot water and electric radiators for heating. As such, the proposed development will completely remove emissions associated with gas fired boilers.

Welcome Pack

- 5.19 The approved planning application was accompanied by a Travel Plan prepared by DHA Group promoting sustainable forms of travel. It is understood these proposals will be implemented through the provision of a "Welcome Pack" provided to all future residents containing information on sustainable travel options and services including maps showing the location of nearby bus stops/railway station with relevant timetables and how online journey planners and accessing real-time travel information can be used effectively.
- 5.20 It is understood that local bus operators will also be contacted with a view to negotiating discounted ticket options for residents, details of which will also be provided in the Welcome Pack.
- 5.21 In addition to this, it is understood that the Welcome Pack will identify:
- The well-designed pedestrian and cycle routes within the site and enhance connectivity and encourage active travel.
 - The provision of adequate cycle parking for all dwellings;
 - Collaboration with local cycle retailers to offer preferential services and purchases;
 - Details of the West Sussex Car Share Scheme³ (part of the Lift share network) to encourage shared travel to workplaces or schools; and
 - The accessibility of the site to online shopping services, with the potential for an agreement with a local supermarket to offer introductory free deliveries.
- 5.22 These measures aim to encourage residents to adopt sustainable travel habits where possible, thereby reducing the impact of private vehicle movements associated with the development and minimising air quality damage.

Conclusion

- 5.23 As concluded earlier, the installation of EV charging infrastructure should by itself provide an air quality cost benefit that exceeds and completely offsets the calculated 5-year emissions cost damage of £11,050. Other measures including the provision of air source heat pumps and a welcome pack providing sustainable travel options will further offset the calculated air quality impacts of the scheme.

³ <https://liftshare.com/uk/community/westsussexcarshare>

6.0 CONSTRUCTION DUST ASSESSMENT

- 6.1 A construction dust assessment has been undertaken in accordance with the Institute of Air Quality Management's (IAQM's) guidance document *"Assessment of Dust from Demolition and Construction" (Ver 2, 2024)*.
- 6.2 The guidance promotes a five-step process to assess the potential impacts of construction dust pre-mitigation, provide mitigation measures specific to the risk and assess the post-mitigation impacts.
- 6.3 The assessment procedure follows the following framework:
- Step 1 - Screen the requirement for a more detailed assessment;
 - Step 2 - Assess the risk of dust impacts of the four phases of construction (demolition, earthworks, construction and track out), taking into account:
 - o the scale and nature of the works, which determines the potential Dust Emission Magnitude (Step 2A); and
 - o the sensitivity of the area (Step 2B).
 - o These factors are combined to give the risk of dust impacts (Step 2C).
 - Step 3 - Determine the site-specific mitigation for the potential activities;
 - Step 4 - Examine the residual effects and determine whether or not these are significant; and
 - Step 5 - Prepare the Construction Dust Assessment.

Steps of Assessment

- 6.4 Step 1 of the assessment procedure is to screen the need for a detailed assessment. The guidance provides distance-based criterion in Box 1 of the guidance which states:

An assessment will normally be required where there is:

- a 'human receptor' within:
 - o 250 m of the boundary of the site; or
 - o 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the site entrance(s).
- an 'ecological receptor' within:
 - o 50 m of the boundary of the site; or
 - o 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the site entrance(s).

- 6.5 There are human receptors within the distances set out in the guidance thus a detailed assessment is required for human receptors.

The following section sets out Step 2 of the assessment procedure.

Potential Dust Emission Magnitude

- 6.6 The guidance explains that the dust emission magnitude is based on the scale of the anticipated works and should be classified as Small, Medium, or Large. The guidance provides examples of the magnitude classification for each of the potential stages.

Demolition

- 6.7 There will be no demolition, since the construction is being carried out in an area without any existing buildings.

Earthworks

- 6.8 The dust generated by the earthworks depends on the nature of the earth and soil at the application site. The characteristics of the soil have been defined using the British Geological Survey's UK Soil Observatory website (British Geological Survey, 2024) and are set out in the table below. Overall, it is considered that, when dry, the soil has the potential to be highly dusty.

Table 6.1: Soil Conditions at the Application Site

Category	Record
Grain Size	Argillaceous
Organic Matter	8.19
Soil Layer Depth	Deep
Soil Parent Material	Claystone/Mudstone
Soil Texture	Clay to Clayey Loam
Soil pH	6.04
Note: -Data obtained from https://mapapps2.bgs.ac.uk/ukso/home.html#:~:text=About%20the%20UK%20Soil%20Observatory,contribute%20information%20about%20your%20soil.	

- 6.9 The exact area of earthworks is 3915 m², but the whole site covers at least an area that is approximately <18000 m², which is a defined example within the IAQM guidance. Dust will arise mainly from the handling and transport of dusty materials (such as dry soil) and potentially stock piling of earth material. The Proposed Development will likely be completed in a number of

phases, helping to minimise dust. However, to provide a conservative assessment, phasing has not been considered. The soil type is a mix of clay, and mudstone. Based on the illustrative criteria in the IAQM guidance document, the dust emission magnitude for earthworks is considered *Small*.

Construction

- 6.10 The Proposed Development includes the erection of 40 residential dwellings. The total volume for construction will be at least approximately $<12000\text{m}^3$. The building materials used are Concrete foundations, Brick / Blocks, landscaping and road development with associated infrastructure. Based on the illustrative criteria in the IAQM, the dust emission magnitude for construction is considered *Small*.

Track out

- 6.11 The exact number of HGVs leaving the site on a single day are unknown. Based on the site area and proposed building volume it is assumed there will be 5 HGV movements per day. These HGVs may lead to dust and dirt being tracked out. However, there are paved roads in the vicinity of the site and based on the site area the maximum length of any unpaved roads that could be on site is 20m. Based on the example definitions set out in the IAQM guidance, the dust emission magnitude for track out is considered *Small*.

Summary of Potential Dust Emission Magnitude

- 6.12 The table below summaries the dust emission magnitude from the construction phases of the Proposed Development.

Table 6.2: Construction Dust Assessment Summary

Activity	Dust Emission Magnitude
Demolition	N/A*
Earthworks	Small*
Construction	Small*
Track out	Small*
Note: * https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf	

Sensitivity of the Study Area

- 6.13 The guidance explains that the sensitivity of the area should take account of a number of factors including:

- the specific sensitivities of receptors in the area;

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

6.14 The IAQM guidance document provides examples of high, medium and low sensitivity receptors for each of the potential effects. These are provided in Box 6 to Box 8 of the guidance and consideration should be given to the additional factors presented in Box 9 of the guidance. The guidance also provides a series of matrices (Tables 2, 3 and 4 of the guidance document) to determine the sensitivity of the area based on the receptor sensitivity, number of receptors, the proximity to the dust emission activity and baseline PM₁₀ concentration. Residential properties are considered high sensitivity receptors to dust soiling and elevated levels of PM₁₀.

6.15 The site is located to the south of Folders Lane, Burgess Hill in the Mid Sussex district of West Sussex. The site is bounded by residential dwellings, i.e., highly sensitive receptors to the north, west, and northwest of the site. There are nearly ~15 highly sensitive receptors at a distance of ~50 m from the site, and ~79 highly sensitive receptors at a distance of ~100 m, and >100 highly sensitive receptors at a distance of ~250 m from the site. Based on Table 2 of the IAQM guidance document, the sensitivity of the area to dust soiling impacts will be *Low*. The distance between the development site and the sensitive receptors are described in the figure below:

Figure 6.1: Identification of Noise Sensitive Receptors



- 6.16 Annual mean PM₁₀ predicted background concentrations in the vicinity of the Proposed Development are predicted to be a maximum of 10.39 µg/m³. There are no high sensitivity receptors that are likely to be exposed to these concentrations within 250 m of the application site. Based on Table 3 of the IAQM guidance, the sensitivity of the area to human health impacts due to elevated levels of PM₁₀ during the demolition, earthworks, and construction stages will be *Low*.
- 6.17 There are no sensitive ecological sites that are within 50 m of the application site. The nearest Site of Special Scientific Interest (SSSI) is SSSI - Ditchling Common which is located ~0.2 miles east of the development site. Based on Table 4 of the IAQM guidance, the sensitivity of the area to ecological impacts due to dust during the earthworks and construction stages will be *Negligible*. The ecological sites in relation to the site are described in the figure below:

Table 6.3: Sensitivity of the Surrounding Area

Potential Impact	Sensitivity of the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	N/A	Low	Low	Low
Human Health	N/A	Low	Low	Low
Ecology	N/A	Negligible	Negligible	Negligible
Notes: IAQM Guidance states that track out may occur along the public highway for up to 500 m from large magnitude sites, 200 m from medium magnitude sites, and 50 m from small magnitude sites, as measured from the site exit.				

- 6.18 In line with the IAQM guidance, sensitive receptors have been considered within 50m of track out routes up to 250 m of the site entrances. There are no high sensitivity properties within 250 m of the roads along which material could be tracked, and thus the area is considered to be of *Low* sensitivity to dust soiling impacts due to track out. In terms of human health, the area is considered to be of *Low* sensitivity.
- 6.19 There are no sensitive ecological sites within 250m of the site. Based on Table 4 of the IAQM guidance, the sensitivity of the area to ecological impacts due to track out will be *Negligible*.

Risk of Dust Effect

- 6.20 The guidance has, helpfully, provided a series of matrices (Table 2, Table 3 and Table 4 of the guidance document) to determine the potential impact at receptors based on the receptor sensitivity, number of receptors and the proximity to the dust emission activity.

Table 6.4: Summary of Risk

Potential Impact	Risk			
	Demolition ^a	Earthworks ^b	Construction ^c	Trackout ^d
Dust Soiling	N/A	Low Risk	Low Risk	Low Risk
Human Health	N/A	Low Risk	Low Risk	Low Risk
Ecological	Negligible	Negligible	Negligible	Negligible
Notes: a. Based on Table 6 of the IAQM guidance document. b. Based on Table 7 of the IAQM guidance document. c. Based on Table 8 of the IAQM guidance document. d. Based on Table 9 of the IAQM guidance document.				

- 6.21 The dust emission magnitudes have been combined with the sensitivities of the area in using the matrices in the guidance (Table 6, Table 7, Table 8 and Table 9 of the guidance), in order to assign a risk category to each activity. The resulting risk categories for the four construction activities, without mitigation, are set out in the table below.

Significance of effects

- 6.22 The IAQM guidance does not provide a method for assessing the significance of effects before mitigation and advises that pre-mitigation significance should not be determined.
- 6.23 Step 3 - The risk categories set out in the table above have been used to determine the appropriate level of mitigation as set out in step 3 of the assessment procedure.

Mitigation

- 6.24 Measures to mitigate emissions will be required during the demolition and construction phase of the proposed development in order to minimise impacts upon nearby sensitive receptors.
- 6.25 The Proposed Development has been identified as low risk for dust soiling effects during earthworks, construction and track out phase. In terms of human health, the proposed development has been identified as low risk during the construction, earthworks, and track out phase. Finally, in terms of Ecological receptors, the risk is negligible with respect to the proposed development.
- 6.26 The IAQM guidance document describes measures that should be employed, as appropriate, to reduce the impacts. In addition to this the IAQM has also published guidance on monitoring during demolition and construction (IAQM, 2018). Based on the finding of this assessment, a set of

measures that are both highly recommended and desirable to be incorporated into the specification for the construction works has been drawn up. These measures are shown in the tables below.

- 6.27 The mitigation measures for the application site should be written into a dust management plan (DMP). The DMP may be integrated into a Code of Construction Practice or the Construction Environmental Management Plan (CEMP) to assist with the discharge of Condition 7.
- 6.28 Where mitigation measures rely on water, it is expected that only sufficient water will be applied to damp down the material. There should not be any excess to potentially contaminate local watercourses.

Table 6.5: Communication

Measure	Highly Recommend / Desirable
Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	Not Required
Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.	Highly Recommended
Display the head or regional office contact information.	Highly Recommended
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.	Desirable

Table 6.6: Dust Management

Measure	Highly Recommend / Desirable
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.	Highly Recommended
Make the complaints log available to the local authority when asked.	Highly Recommended
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 logbook.	Highly Recommended
Hold regular liaison meetings with other high risk construction sites within 250 m 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.	Not required

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 windowsills within 100 m of site boundary, with cleaning to be provided if necessary.	Desirable
Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.	Highly Recommended
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.	Highly Recommended
Agree dust deposition, dust flux, or real-time PM ₁₀ continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.	Highly Recommended
Preparing and maintaining the site	
Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	Highly Recommended
Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.	Highly Recommended
Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.	Desirable
Avoid site runoff of water or mud.	Highly Recommended
Keep site fencing, barriers and scaffolding clean using wet methods.	Desirable
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.	Desirable
Cover, seed or fence stockpiles to prevent wind whipping.	Desirable
Operating vehicle / machinery and sustainable travel	
Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone, Ultra-Low Emission Zone, and the London NRMM standards, where applicable.	N/A
Ensure all vehicles switch off engines when stationary - no idling vehicles.	Highly Recommended
Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.	Highly Recommended
Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).	Desirable
Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.	Not required
Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).	Not required

Operations	
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.	Highly Recommended
Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.	Highly Recommended
Use enclosed chutes and conveyors and covered skips.	Highly Recommended
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	Highly Recommended
Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.	Desirable
Waste management	
Avoid bonfires and burning of waste materials.	Highly Recommended
Reuse and recycle waste to reduce dust from waste materials.	Highly Recommended

Table 6.7: Measures Specific to Earthworks

Measure	Highly Recommend / Desirable
Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.	Not required
Use Hessian, mulches or tackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.	Not required
Only remove the cover in small areas during work and not all at once.	Not required

Table 6.8: Measures Specific to Construction

Measure	Highly Recommend / Desirable
Avoid scabbling (roughening of concrete surfaces) if possible.	Desirable
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.	Desirable
Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.	Not required
For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.	Not required

Table 6.9: Measures Specific to track out

Measure	Highly Recommend / Desirable
Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.	Desirable
Avoid dry sweeping of large areas.	Desirable
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	Desirable
Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.	Not required
Record all inspections of haul routes and any subsequent action in a site log book.	Desirable
Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.	Not required
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	Desirable
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.	Not required
Access gates to be located at least 10 m from receptors where possible.	Not required

Summary of Construction Dust Assessment

- 6.29 The construction dust assessment for the proposed development has been conducted in compliance with IAQM guidance.
- 6.30 Construction activities have the potential to generate dust and emissions. The proposed development site has been classified as low risk for dust soiling during earthworks, construction, and track out. However, a comprehensive package of mitigation measures has been recommended and will be implemented to minimize dust emissions. With these measures in place, any residual effects are anticipated to be '*not significant*.'
- 6.31 The IAQM guidance acknowledges that, despite robust dust management plans, it is not always possible to ensure complete effectiveness under all conditions, such as adverse weather. As a result, the local community may occasionally experience short-term annoyance. However, the scale and duration of such occurrences are not expected to be significant enough to alter the conclusion that the overall construction effects of the proposed development will remain '*not significant*' if the mitigation measures are properly implemented to minimize dust emissions.

Health Impacts

- 6.32 The health risk and impacts of the construction dust with respect to the high, medium and low sensitivity receptors were found to be low, since the annual mean PM₁₀ predicted background concentrations be a maximum of 10.39 µg/m³ in the vicinity of the proposed development and >100 high sensitivity receptors were found exposed to these concentrations < 250 m of the application site poses a low risk, showing that no further assessment or mitigation measures are required.

Construction Traffic and Plant

- 6.33 As previously stated, there is no significant construction and demolition effects from the proposed development. However, we recommend some of the following Best Available Techniques (BAT) to be adopted during the construction phase, as listed below:
- All vehicles should switch off engines when stationary, no idling vehicles;
 - Minimise the movement of construction traffic around the site;
 - Maximising efficiency (this may include alternative modes of transport, maximising vehicle utilisation by ensuring full loading and efficient routing);
 - Vehicles should be well maintained and kept in a high standard of working order;
 - Avoid the use of diesel- or petrol-powered generators by using mains electricity or battery powered equipment where possible; and
 - Locate plant away from boundaries close to residential areas.

7.0 CONCLUSIONS

- 7.1 An assessment of the air quality damage costs and mitigation of these costs has been undertaken in accordance with Sussex Air Partnership's *"Air Quality and Emissions Mitigation Guidance for Sussex (2021)"*.
- 7.2 The total five-year damage cost is calculated to be £11,050.
- 7.3 This damage cost will be completely offset by the cost benefit achieved through the installation of electric vehicle charging points, as necessary to comply with Approved Document S of the Building Regulations 2010, as amended. The cost benefit of the provision of EV charger is estimated to be £15,498.
- 7.4 Additional mitigation is embedded in the scheme through the use of air source heat pumps to provide heating to the proposed house, whilst flats will have hot water provided by ASHP and heating by electric radiators in preference to gas fired boilers.
- 7.5 It is also proposed that a *"Welcome Pack"* is provided to future residents promoting sustainable travel options.
- 7.6 It is therefore concluded that the mitigation proposed for the permitted development comfortably exceeds the estimated damage cost and that mitigation is both proportionate and effective in addressing air quality impacts and satisfies the requirements of Condition 9.
- 7.7 A construction dust assessment in line with the Institute of Air Quality Management (IAQM) guidance has also been undertaken. The assessment concludes that the risk of dust emissions during earthworks, construction, and track-out activities is "low" and appropriate mitigation recommendations reflecting this are presented.
- 7.8 It is expected that these recommendations will be implemented within a Construction Environmental Management Plan (CEMP), as required by Condition 7.

Glossary

AADT	Annual Average Daily Traffic
AQEMA	Air Quality Emissions Management Assessment
DEFRA	Department for Environment, Food and Rural Affairs
EFT	Emission Factor Toolkit
HGV	Heavy Goods Vehicle
IAQM	Institute of Air Quality Management
MDC	Mid-Sussex District Council
NOx	Nitrogen Oxides
NPPF	National Planning Policy Framework
PPG	Planning Practice Guidance
PM _{2.5}	Small airborne particles, more specifically particulate matter less than 2.5 micrometres in aerodynamic diameter
SSSI	Site of Special Scientific Interest
SUDs	Sustainable Drainage Systems
WHO	World Health Organization
µg/m ³	Microgrammes per cubic metre

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Appendix A

Manufacturer's Details for Sync EV EVS7G EV Charging Points



The smart way to charge

Packed with Smart technology, BG SyncEV charging stations are the perfect solution for electric vehicle charging at home and the workplace.



www.sync-ev.co.uk

Why choose BG Sync EV?

With over 80 years experience in the electrical industry, BG SyncEV (part of the Luceco PLC Group) inspires confidence and trust.

Our range of EV charging products for home or the workplace are smart, powerful and safe, packed full of technology to future proof your investment.



Smart

We optimise EV charging for the cheapest, greenest energy possible.

Track usage and costs all within our easy to use app.



Safe

Built-in RCD and PEN protection.

No need for complex and expensive earth-rod installations, and our safety RCD protection ensures peace of mind against electrical shocks or short circuits.



Reliable

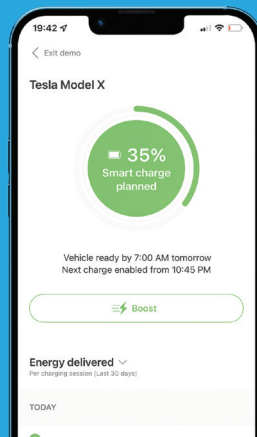
Covered by a 3 year warranty* as standard, telephone & online technical support, and guaranteed compatibility with all EV makes and models.

Compatible with all electric and hybrid plug-in vehicles



A greener, simpler way to charge your EV

Use the **ev.energy** app to smart charge your electric vehicle – the simple way to lower your carbon usage and make savings on your home energy bill



How does it work?



Set your ready by time – we'll communicate with your car and take care of the rest



Save money and CO₂ by automatically charging when greener, cheaper energy is more readily available*

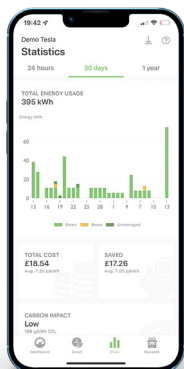
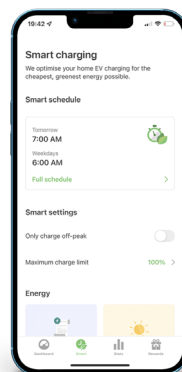


Track cost and energy use from your charging sessions at home and away

*only with compatible energy tariffs

Smart charge your EV

- ✓ Schedule start times to charge your vehicle during your energy supplier's off-peak period
- ✓ Only need a partial charge? – Set your minimum and maximum kWh to ensure you have the power you need
- ✓ Need your car immediately? – Override smart charging to Boost the charge



Track your usage

- ✓ Our app provides visibility on cost, energy consumed and time charging – at home and on-the-go

EV Chargers

Packed with Smart technology, BG SyncEV charging stations are the perfect solution for electric vehicle charging at home, and at the workplace.

5 Standard models available: x2 Tethered, x3 Socket.

Plus the COMPACT Socket Charger – **The smallest EV Charger on the market.**

Features:

- Quick and easy installation – with UK based technical support
- Full Smart functionality via ev.energy App
- Configurable charging – up to 7.4 kW (32A)
- Optional Dynamic charging
- No earth rod required – integrated open PEN conductor protection
- Safe – Integrated type A 30mA RCD with 6mA DC protection
- OCPP 1.6j connectivity – free lifetime over-the-air updates
- Compatible with all electric and hybrid plug-in vehicle



Tethered models

- 7.5m cable with Type 2 plug
- Complies with ALL Electric Vehicles Smart Charge Point Regulations
- Includes Type 2 wall holster



CODE :

EVT77G

EVT77GG

COMMUNICATION :

Wi-Fi + Ethernet

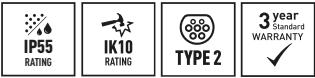
Wi-Fi + Ethernet + 4G



Type 2 wall holster
EVHLD

Socket models

- Type 2 socket with auto-lock
- Models with Wi-Fi, Wi-Fi + 4G and Wi-Fi + 4G + RFID options
- Complies with ALL Electric Vehicles Smart Charge Point Regulations



CODE:	COMMUNICATION :
EVS7G	Wi-Fi + Ethernet
EVS7GG	Wi-Fi + Ethernet + 4G
EVS7GGR	Wi-Fi + Ethernet + 4G + RFID

Compact charger – Smallest EV charger on the market

- Type 2 socket with auto-lock
- Models with Wi-Fi, Wi-Fi + 4G and Wi-Fi + 4G + RFID options
- Complies with ALL Electric Vehicles Smart Charge Point Regulations
- Full Smart functionality via SyncEV app



CODE :	COMMUNICATION :
EVCP-7KW-S-1PH: 32A BLACK	Wi-Fi + RFID
EVCP-7KW-S-1PH: 32A BLACK	Wi-Fi + 4G + RFID
EVCP-7KW-S-1PH: 32A WHITE	Wi-Fi + RFID
EVCP-7KW-S-1PH: 32A WHITE	Wi-Fi + 4G + RFID

Mode 2 chargers

Perfect for travelling to destinations that only offer a standard 13A plug socket, suitable for all plug-in electric vehicles.



- Provides safe and intelligent portable EV charging
- UK 3 pin plug to Type 1 or Type 2 EV plug
- Charges up-to 10A, 2.4kW (Mode 2) – up to 8 miles per charging hour
- IP54 rated protection
- 1 year warranty

CODE :	TYPE :	LENGTH :
EVC1135SL	UK 3-PIN – TYPE 1	5 METRE
EVC11310SL	UK 3-PIN – TYPE 1	10 METRE
EVC2135SL	UK 3-PIN – TYPE 2	5 METRE
EVC21310SL	UK 3-PIN – TYPE 2	10 METRE

Cables

Suitable for home or public use, offering options for Type 1, Type 2 and 3-phase.



- Type 1, Type 2, and Type 2 3-phase available
- Robust construction with end protectors
- Suitable for 16 & 32A sockets
- Weather resistant IP55 rated
- 5 & 8 metre lengths

CODE :	TYPE :	LENGTH :
EVC22325SL	TYPE 2 – TYPE 2	5 METRE
EVC22328SL	TYPE 2 – TYPE 2	8 METRE
EVC2135SL	TYPE 2 – TYPE 1	5 METRE
EVC22325TL	TYPE 2 – TYPE 2 3-PHASE	5 METRE

Accessories



Load management
kit (EVS/EVT models)
EVA120CT1



Load management
kit (EVCP models)
SYNC-LMK



Type 2
wall holster
EVHLD



Charging cable
carry case
EVCASE



Charger stand
(EVS/EVT models)
EVASTAND12S

*3 year warranty valid upon installation and online registration by
a nominated SyncEV installer. See syncev.co.uk for more details

EV Charger Circuit Protection

Designed specifically for use with EV vehicle chargers to allow for internal and external wiring applications and are 18th Edition Amendment 2 compliant.



- Quick and easy installation
- Type 2 SPD included
- IP rated protection
- 10 year warranty



CODE :	TYPE :	APPLICATION :
CFEV1A	40A TYPE A RCD – 40A B CURVE MCB – TYPE 2 SPD – GREY	External
CFEV2	100A MAIN SWITCH – 40A B CURVE MCB – TYPE 2 SPD – GREY	External
CFEV1RDA	40A TYPE A DOUBLE POLE RCBO – 100A MAIN SWITCH – TYPE 2 SPD – GREY	External
CFUEV1A	TYPE A RCD – 40A B CURVE MCB – TYPE 2 SPD	Internal
CFUEV2	100A MAIN SWITCH – 40A B CURVE MCB – TYPE 2 SPD	Internal
CFUEV1RDA	40A TYPE A DOUBLE POLE RCBO – 100A MAIN SWITCH – TYPE 2 SPD	Internal
CUMB40	40A B Curve MCB	For BG Fortress Consumer Units

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