

LTRO Perrymount Limited

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Air Quality Damage Cost and Emissions Mitigation Statement: 25 Perrymount Road, Haywards Heath

1. Introduction

An Emission Mitigation Assessment has been undertaken support of planning application for the erection of an 8-storey building (comprising of 38 flats 2 x 1 bed and 17 x 2 bed) with associated landscaping, parking and refuse stores. The Site is being developed on the former car park at the above Site (ref: DM/23/2259).

The assessment has been undertaken to address comments raised on the air quality assessment which was submitted to accompany the planning application for the Site. The following comments were raised: *"With regard to air quality, an assessment of the operational use has been conducted, and the overall impact on air quality is deemed negligible. A damage cost calculation has been performed in alignment with the Sussex Air Guidance and Defra's damage cost values. Consequently, it is recommended that a mitigation scheme be established in accordance with the calculated value. However, the proposed mitigation measures, namely PV panels and mechanical ventilation, do not align with accepted methods of mitigation, as they do not have a direct impact on local air quality. Furthermore, the current requirement for mechanical ventilation is primarily related to addressing noise levels arising from train noise and the existing design. I would direct the applicant's attention to the Sussex Air Guidance for a list of potential mitigation measures. Our preferred options include the installation of electric vehicle (EV) charging points, utilisation of ultra-low NOx boilers, and provision of secure cycle storage. The mitigation strategy should be revised to introduce measures that genuinely influence local air quality. At this stage, further information is required in relation to noise an air quality."*

Moreover, the previously undertaken Air Quality Assessment in support of the proposed development of 28 residential units (produced by Temple, July 2022) has been reviewed. Following review against the updated details of the scheme, it is considered that the conclusions of the 2022 Air Quality Assessment remain valid.

This is due to the site boundary not having materially changed since the 28-unit scheme, therefore future receptors introduced by the Proposed Development are not expected to be exposed to concentrations that breach ambient air quality objectives. The traffic generation associated with the Proposed Development is not predicted to exceed the screening thresholds for a detailed assessment, therefore detailed modelling of the developments impact on the local area is not necessary, following the EPUK/IAQM guidance. This remains unchanged from the 2022 Air Quality Assessment.

Similarly, the construction phase parameters informing the qualitative dust assessments have not materially changed from the 2022 assessment, therefore, the conclusions also remain valid.

Using traffic data applicable to a 38-unit scheme, the remainder of this letter details the findings of the Emissions Mitigation Assessment, which has been undertaken in accordance with the Air quality and emissions mitigation guidance for Sussex (2021).

2. Emissions Mitigation Assessment

The calculation uses the DEFRA Emissions Factor Toolkit to estimate the transport emissions from a proposed development, which is then used to estimate the associated health damage cost. The emissions assessment and corresponding mitigation calculation has followed this process:

1. The 'annual link emissions' for NO_x and PM_{2.5} were calculated using Defra's Emissions Factor Toolkit (EFT, v12). The annual average daily traffic (AADT) flow and percentage of heavy-duty vehicles (%HDVs) were based on the gross trips/ annum reported in the transport assessment. An average speed of 50 km/h and 10 km/ trip were assumed, as per the Air quality and emissions mitigation guidance for Sussex (2021);
2. The annual link emissions were multiplied by the latest (2021) HM Treasury and Defra IGCB Air Quality Damage costs. The 'urban medium' costs were applied, as recommended in the FORGE area types listed in the 'TAG UNIT A5.4: Marginal External Costs' guidance;
3. Costs were multiplied by five, to obtain the results for a five-year exposure period; and
4. The costs for NO_x and PM_{2.5} were combined, to provide a total health damage value.

Emission Mitigation Cost Calculation

According to the transport consultants (Crosby Transport Planning), 181 daily two-way vehicle movements (07:00-19:00) are anticipated to be generated by the proposed site. This daily figure has been used as the AADT input within the EFT. The annual link emissions generated by the proposed development is shown in **Table 1**.

Table 1: Annual emissions generated by the proposed development

Road Type	AADT	HDV%	Speed(kph)	Link Length (km)	Annual emissions (NO _x kg/year)	Annual emissions (PM _{2.5} kg/year)
Urban (not London)	181	0	50	10	129.52	11.96

The damage cost calculation has been calculated by multiplying the annual emissions to the latest HM Treasury and Defra IGCB damage costs (2022 costs published in 2023). The cost to be borne by the developer on emission mitigation is shown in **Table 2**.

Table 2: Estimation of damage value

Cost Category	Pollutant	Central damage cost (£/t)	Annual emission t/y	Damage cost, 1 year (£)	Damage cost for 5 years (£)	Total damage cost (£)
PM _{2.5} Road transport urban medium	PM _{2.5}	63,766	0.01	762.80	3,814.20	9,677.51
NO _x Road transport urban medium	NO _x	9,054	0.13	1,172.70	5,863.30	

It is recommended that at least **£9,677.51** is spent on measures designed to improve air quality in connection with the proposed development. The damage cost calculated in the previous assessment was £7,396. The increase in cost could be attributed to revision of the proposal

leading to an increase in the number of residential units and hence increased traffic generated by the development when operational. The damage cost calculated can be met on electric vehicle (EV) charging points, utilisation of ultra-low NOx boilers, and provision of secure cycle storage.

With regards to cycle parking, the locally adopted standards contained within the West Sussex County Guidance on Parking at New Developments stipulate a requirement for 1- 2 bedroom flats of 0.5spaces/flat if provided within a communal store. This equates to an overall minimum requirement of 19 cycle spaces for residents for the Proposed Development.

The Transport Technical Note produced by Crosby Transport Planning (September 2023) states that the current proposed site layout plan illustrates that cycle storage could be provided with an overall capacity for up to 28 bicycles. An additional 5 x E-bike charging points will also be provided. The proposed provision therefore exceeds the minimum requirement.

In terms of electric vehicle charging provision, the pre-application advice provided by West Sussex County Council confirmed that a minimum of 41% of spaces should offer electric vehicle (EV) charging as standard. However, all eight car parking spaces shall have access to active EV charging points (i.e. 100%).

With regards to the use of ultra-low NOx boilers, the energy demand of the scheme is proposed to be met 100% electrically, therefore there will be no emissions associated with the use of boilers.

Based on their experience with other projects, the applicant has indicated that the approximate expected costs for the provision of EV charging points and cycle storage may be as follows:

- EV Charge Point: approx. £1100 per unit x 8 proposed parking spaces = £8,800
- Cycle Parking: approx. £100 per unit x 28 proposed storage spaces = £2,800

The total expected costs for the proposed EV charging points and cycle parking spaces amounts to approximately **£11,600**. It should be noted that this figure does not include the costs for the additional 5x E-bike charging points or the air source heat pumps, therefore it is considered that the amount spent on mitigating air quality impacts comfortably exceeds the air quality damage costs, such that no further mitigation is required.