

Capella House, Worthing

Air Quality Technical Note

Client: Architectus Ltd
Ref: TN01-25248-R0
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1. INTRODUCTION

- 1.1 Cass Allen was appointed by Architectus Ltd to prepare an Air Quality Assessment (AQA) to accompany the planning application (reference: AWDM/1329/25) for:

Erection of a five to seven storey building with 29 self contained residential units (Use Class C3) including undercroft parking and cycle store linked to listed building.

- 1.2 The AQA concluded that no significant residual air quality effects were anticipated as a result of the construction or operation of the proposed development and therefore, that the site would be suitable for the proposed residential use.
- 1.3 Subsequently, comments were received from the Adur & Worthing Councils (AWC) Environmental Protection, Environmental Health & Licensing department (dated 16 December 2025). This Technical Note is intended to address AWC's comments.

2. AWC COMMENTS AND CASS ALLEN RESPONSES

Comment 1

An Air Quality Assessment has been completed by Cass Allen Consultants dated 22 July 2025 (ref. RP01-25248-R0). Paragraph 8.6 refers to the 'residual effect of the development's operational phase vehicle trip generation' and concludes that as the parking provision is less than the previous use the number of daily trips will decrease. I have two issues with this.

1. We take the view that it is the emissions from the proposed development in their entirety that are to be included in the damage cost calculations, irrespective of previous use. So the use of 'residual' traffic numbers is not accepted. This view has been endorsed by Defra.

Response 1

- 2.1 Having undertaken numerous Air Quality Assessments for developments across Sussex since the Sussex Air Quality Partnership's 'Air quality and emissions mitigation guidance for Sussex' was first published in 2013, we have not previously been required to assess emissions on a gross basis where an existing lawful use is present. In our experience, all Sussex local authorities accept the use of net (i.e., increase) rather than gross traffic flows.
- 2.2 This approach is consistent with the latest version of the Sussex guidance (2021), which advises practitioners to '*quantify the change in emissions...*' resulting from the development. Assessing gross emissions would not reflect the actual environmental effect of the proposal compared with the existing situation and would be inconsistent with standard EIA and non-EIA assessment principles.
- 2.3 Furthermore, much larger applications in the vicinity, such as the major industrial development at Decoy Farm (AQDM/1745/22 – approved December 2024) have explicitly assessed emissions based on '*the increase in trips due to the Proposed Development*' to assess overall emissions impacts. This demonstrates a consistent and accepted precedent for the use of net traffic flows when calculating damage costs.
- 2.4 We are not aware of Defra guidance which explicitly or implicitly implies that damage cost calculations should apply to total trip generation. The last Defra 'Air Quality Damage Cost Update: 2025 Report' (10 December 2025) states: '*Damage costs are representative estimates of the external costs associated with a marginal change in pollutant emissions. The costs are expressed per tonne of pollutant emission. They can be readily combined with forecasted changes in emissions to provide an approximation of the aggregate external costs.*'
- 2.5 It follows, therefore, that no Emissions Cost Calculation was undertaken for a development which is not expected to lead to an increase in traffic.
- 2.6 Nonetheless, a simple emissions cost calculation has been summarised in the table below using the robust TRICS trip generation from the Transport Statement (TS) (GTA, October 2025), which indicates 57 two-way daily vehicle movements. The details are provided in Tables 1 and 2.

Table 1 Emissions Cost Calculation - Inputs

Input	Value
Area	England (not London)
Year	2028

Input	Value
Road type	Urban (not London)
Traffic flow	57 AADT (0% HDV)
Speed	30km/hr (allowing for congestion)
No hours	24
Link length	10km (in line with Sussex guidance)
NO _x damage cost	£17,655 (road transport – urban big – central estimate)
PM _{2.5} damage cost	£152,869 (road transport – urban big – central estimate)

Table 2 Emissions Cost Calculation - Outputs

Type	Value	
Annual NO _x emissions	0.0309 tonnes	
Annual PM _{2.5} emissions	0.0039 tonnes	
Year	NO _x Emissions Cost (+2% uplift/year)	PM _{2.5} Emissions Cost (+2% uplift/year)
1	£546.03	£597.56
2	£556.96	£609.51
3	£568.09	£621.70
4	£579.46	£634.13
5	£591.05	£646.81
Total	£2,841.58	£3,109.70
Grand Total	£5,951.29	

- 2.7 As indicated in Table 2, an emissions cost calculation, using a worst-case gross trip generation, results in an emissions cost of circa £6,000. It is anticipated that this will be more than offset by the proposed measures presented in Table 5.1 of the Travel Plan, which include promotion of walking & cycling and public transport measures to encourage the transition to more sustainable modes of transport.
- 2.8 The development is also located in a 'highly sustainable' location as recognised in the Worthing Local Plan 2023 with excellent access to town centre facilities, plus bus and rail services.

Comment 2

2. There is no reference to data from a transport assessment.

Response 2

- 2.9 No Transport Assessment was required to be submitted with the planning application due to the scale of the development, although a TS and Travel Plan (TP) (GTA, October 2025) have been submitted subsequent to the completion of the Air Quality Assessment.
- 2.10 The TS states *'The residential use of the site is proposed as car-free, consistent with Principal C of the WSCC Guidance on Parking at New Developments (September 2020)... the site's very good sustainable transport links, combined with comprehensive parking controls and its location within a CPZ, support a successful car-free development in this location... located on the same road as Worthing railway station... frequent bus services, and walking and cycling connections to a full range of local amenities'*. This corroborates the method and findings of the AQA.

Comment 3

Defra confirm that the application of the damage cost approach is a valuable tool to see costs to society to based on emissions, which are better placed to be monetised rather than concentrations which vary with dispersal conditions, etc and were (and still are) totally misaligned with the health effects. Therefore as referenced above, total emissions are to be taken into account. Note that any mitigation subsequently proposed must be that not already required by other standards such as building regulations or parking standards.

Response 3

- 2.11 As detailed above, given the car-free nature of the development it is anticipated that the cost of the measures detailed within the submitted TP would more than offset any theoretical calculated cost (disregarding the fact that, in line with the Sussex guidance, the net development flows would actually be expected to provide an 'emissions cost benefit', rather than damage).

Comment 4

Furthermore, there is also no reference to any cumulative impacts, this must be considered.

Response 4

- 2.12 The potential for cumulative air quality effects has been considered proportionately, having regard to the scale of the proposed development and the local context.
- 2.13 The development comprises 29 residential flats in a highly sustainable town centre location and is proposed as a car-free scheme, with no on-site residential parking and restrictions on eligibility for residents' parking permits. The TS forecasts a very low level of vehicle trip generation, which on its own was concluded to be readily accommodated on the local highway network.

- 2.14 There are no known committed or consented developments in the immediate vicinity that, when combined with the development, would be expected to materially alter local traffic conditions or air quality conditions. Whilst the wider Teville Gate allocation is identified within the Worthing Local Plan, this site is recognised as a highly sustainable location and its development has been assessed through the plan-making process, including consideration of cumulative transport and environmental effects at a strategic level.
- 2.15 Given the very small scale of the proposed development, its car-free nature, and its location within an area of excellent public transport accessibility, any additional contribution to cumulative vehicle emissions would be negligible. On this basis, cumulative operational air quality effects are not considered likely to be significant, and the conclusions of the AQA remain unchanged.

3. CONCLUSIONS

- 3.1 This Technical Note has been prepared to address comments raised by AWC in respect of the submitted AQA for the proposed residential development at Capella House, Worthing.
- 3.2 The review has confirmed that the methodology and conclusions of the AQA remain appropriate and robust. The development is small in scale, proposed as a car-free scheme, and located in a highly sustainable town centre location with excellent access to public transport, services and amenities.
- 3.3 Whilst emissions damage costs are typically assessed on a net change basis in line with Sussex guidance and established practice, a worst-case gross emissions cost calculation has been undertaken for completeness. This indicates a very small theoretical emissions cost, which would reasonably be expected to be more than offset by the sustainable transport measures set out within the submitted Travel Plan.
- 3.4 Cumulative operational air quality effects have been considered proportionately and are not expected to be significant, given the low trip generation associated with the development, the absence of nearby schemes likely to materially affect local air quality, and the sustainable nature of development in this location.
- 3.5 On this basis, it is concluded that the proposed development would not result in significant adverse air quality effects during either the construction or operational phases, and the site remains suitable for the proposed residential use.