Addendum Note

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Weybridge Business Park, Weybridge

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Prepared By: CW	**Approved By:** SG	

1. Introduction

1.1. This addendum has been produced by Air and Acoustic Consultants Ltd to assess the impacts of a commercial development located at Weybridge Business Park, Weybridge. A full air quality assessment[1] was previously produced by Air and Acoustic Consultants Ltd, since the submission of that air quality assessment the proposed site layout has been changed. In light of this a revised operational air quality impact assessment has been undertaken, the results of which are presented in this addendum note.

2. Development Proposals

2.1. The development proposals comprise the construction of a number of commercial buildings with associated parking. The proposed revised layout is shown in Figure 1.

2.2. It should be noted that the quantum of floorspace for Unit 100 has been reduced, with the number of parking spaces on the northern site also reducing by six spaces.

[1] Air & Acoustic Consultants, 2022. *Weybridge Business Park, Weybridge – Air Quality Assessment*.

Figure 1: Proposed Site Layout

3. Legislation and Guidance

3.1. The legislation and guidance which forms the basis of this updated assessment is identical in the original assessment which is contained in the original air quality assessment.

4. Assessment Receptors

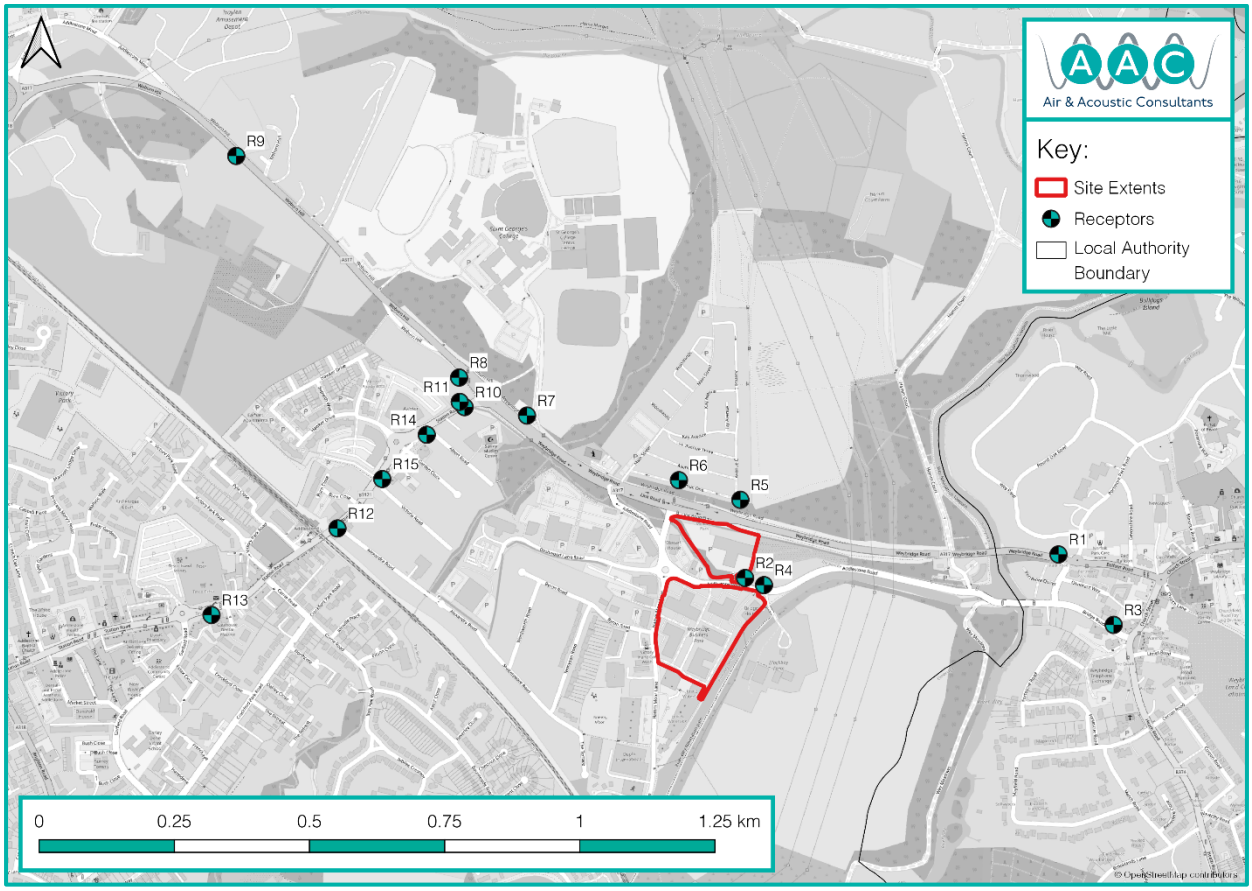
4.1. The same receptors have been modelled as per the original air quality assessment. The selected air quality sensitive receptor locations are detailed in Table 1 and illustrated in Figure 2.

Table 1: Receptor Locations

ID	Description	Coordinates (m)		
		X	Y	Z
Human Receptors				
R1	Existing Residential Receptor	506973	164815	1.5
R2	Existing Residential Receptor	506393	164771	1.5
R3	Existing Residential Receptor	507075	164684	1.5
R4	Existing Residential Receptor	506428	164758	1.5
R5	Existing Residential Receptor	506385	164915	1.5

ID	Description	Coordinates (m)		
		X	Y	Z
Human Receptors				
R6	Existing Residential Receptor	506271	164952	1.5
R7	Existing Residential Receptor	505990	165071	1.5
R8	Existing Residential Receptor	505865	165141	1.5
R9	Existing Residential Receptor	505452	165550	1.5
R10	Existing Residential Receptor	505875	165087	1.5
R11	Existing Residential Receptor	505866	165096	1.5
R12	Existing Residential Receptor	505640	164863	1.5
R13	Existing Residential Receptor	505407	164703	4
R14	Existing Residential Receptor	505805	165036	1.5
R15	Existing Residential Receptor	505722	164954	1.5
Addlestone AQMA Monitoring				
RY14	Diffusion Tube	504992	164605	2.3
RY60	Diffusion Tube	504966	164836	2.4
Weybridge AQMA Monitoring				
Weybridge 7	Diffusion Tube	507199	164804	2.4
Weybridge 5	Diffusion Tube	507609	164966	2.2
Weybridge 6	Diffusion Tube	507511	164936	2
Weybridge 10	Diffusion Tube	507478	164924	1.7
Weybridge 11	Diffusion Tube	507478	164924	1.7
Weybridge 12	Diffusion Tube	507478	164924	1.7
Weybridge 13	Diffusion Tube	507459	164909	1.8
Weybridge 14	Diffusion Tube	507459	164909	1.8
Weybridge 15	Diffusion Tube	507459	164909	1.8
Weybridge 1	Diffusion Tube	507448	164900	2.3
Weybridge High Street 1	Automatic Monitor	507478	164924	1.7
Weybridge High Street 2	Automatic Monitor	507459	164909	1.8

Figure 2: Assessment Receptor Locations



5. Operational Impacts – Traffic Emissions

Option A

Sensitive Receptors

5.1. The '2027 Future Baseline' NO_2, PM_{10} and $PM_{2.5}$ concentrations at the previously specified human receptor locations have been compared to the '2027 Future Baseline + Proposed Development' concentrations and the results are set out in Table 2, Table 3 and Table 4. The tables also set out the EPUK & IAQM (2017)[2] impact descriptor at each receptor location.

Table 2: Option A Predicted NO_2 Impacts at Specified Receptors

Calculated NO_2 Annual Mean (µg/m^3)				
Receptor	2027 Baseline	2027 Baseline + Proposed Development	% Change of Objective	Impact Descriptor
R1	30.1	30.3	0%	Negligible
R2	14.8	15.3	1%	Negligible
R3	15.9	15.9	0%	Negligible
R4	15.0	15.4	1%	Negligible

[2] EPUK & IAQM, 2017. *Land-Use Planning & Development Control: Planning for Air Quality*.

R5	17.0	17.0	0%	Negligible
R6	18.0	18.2	0%	Negligible
R7	22.2	22.5	1%	Negligible
R8	20.8	21.0	0%	Negligible
R9	22.4	22.6	0%	Negligible
R10	24.3	24.7	1%	Negligible
R11	22.1	22.4	1%	Negligible
R12	23.7	24.1	1%	Negligible
R13	16.3	16.4	0%	Negligible
R14	19.0	19.3	1%	Negligible
R15	20.2	20.4	1%	Negligible

Note: **Bold** indicates exceedance of the NO_2 annual mean objective.

Table 3: Option A Predicted PM_{10} Impacts at Specified Receptors

Calculated PM_{10} Annual Mean ($\mu g/m^3$)				
Receptor	2027 Baseline	2027 Baseline + Proposed Development	% Change of Objective	Impact Descriptor
R1	20.1	20.2	0%	Negligible
R2	14.8	15.0	1%	Negligible
R3	15.1	15.1	0%	Negligible
R4	14.9	15.0	0%	Negligible
R5	15.8	15.8	0%	Negligible
R6	15.8	15.9	0%	Negligible
R7	17.8	17.9	0%	Negligible
R8	16.6	16.7	0%	Negligible
R9	18.4	18.4	0%	Negligible
R10	17.9	18.0	0%	Negligible
R11	17.2	17.3	0%	Negligible
R12	18.1	18.3	0%	Negligible
R13	15.6	15.7	0%	Negligible
R14	16.0	16.1	0%	Negligible
R15	17.4	17.5	0%	Negligible

Note: **Bold** indicates exceedance of the PM_{10} annual mean objective.

Table 4: Option A Predicted $PM_{2.5}$ Impacts at Specified Receptors

Calculated $PM_{2.5}$ Annual Mean (µg/m³)				
Receptor	2027 Baseline	2027 Baseline + Proposed Development	% Change of Objective	Impact Descriptor
R1	13.1	13.1	0%	Negligible
R2	10.1	10.2	1%	Negligible
R3	10.4	10.4	0%	Negligible
R4	10.2	10.3	0%	Negligible
R5	10.7	10.7	0%	Negligible
R6	10.7	10.7	0%	Negligible
R7	11.7	11.8	0%	Negligible
R8	11.1	11.1	0%	Negligible
R9	12.0	12.1	0%	Negligible
R10	11.8	11.9	0%	Negligible
R11	11.4	11.5	0%	Negligible
R12	12.2	12.3	0%	Negligible
R13	10.8	10.8	0%	Negligible
R14	10.8	10.8	0%	Negligible
R15	11.8	11.8	0%	Negligible

Note: **Bold** indicates exceedance of the $PM_{2.5}$ annual mean objective.

NO_2

5.2. The modelled NO_2 concentrations in Table 2 show that NO_2 concentration at all specified residential receptor locations, are below the annual mean objective (40 µg/m³).

5.3. Using the matrix in Table 3.2 of the original air quality assessment, it can be seen that the impacts associated with the Proposed Development are anticipated to be **negligible (adverse)** at all receptors.

5.4. Based on the annual average mean concentration at all reports being below 60 µg/m³, it is unlikely that any receptor identified would experience an exceedance of the 1-hour mean objective.

PM_{10}

5.5. The modelled PM_{10} concentrations in Table 3 do not predict any exceedances of the annual mean objective (40 µg/m³) at any of the specified receptor locations. Using the matrix in Table 3.2 of the original air quality assessment, it can be seen that the impacts are anticipated to be **negligible (adverse)**.

5.6. For PM_{10}, the following equation can be used to derive the number of days that the 24-hour mean objective (50 µg/m³) is likely to be exceeded:

$$\text{Num. 24-hour exceedances} = -18.5 + 0.00145 \times \text{annual mean}^3 + \left(\frac{206}{\text{annual mean}}\right)$$

5.7. There are limitations to this calculation, and this is set out in LAQM.TG(16), which states:

"The relationship does have limitations in so far that it should not be applied when the annual mean PM_{10} concentration is lower than 14.8 µg/m³".

5.8. On the basis that all receptors are above 14.8 µg/m³, concentrations can be used to inform whether the 24-hour mean objective will be exceeded or not. The highest concentration is predicted to be 20.2 µg/m³ at Receptor R1. Based on the formula above, this predicts 3.6 exceedance days, which is below the 35-days annual limit. It is therefore thought that none of the receptors would be exposed to any material impact from the short-term concentrations of PM_{10}.

$PM_{2.5}$

5.9. The modelled $PM_{2.5}$ concentrations for both options in Table 4 do not predict any exceedances of the Stage 2 Post 2020 annual mean objective (20 µg/m³) at any of the specified receptor locations. Using the matrix in Table 3.2 of the original air quality assessment, it can be seen that the impacts are anticipated to be **negligible (adverse)**.

Significance of Impacts

5.10. The impacts on the receptors associated with the Proposed Development are anticipated to be negligible (adverse) for NO_2, PM_{10} and $PM_{2.5}$ concentrations. The concentrations do not exceed the relevant national objectives / limits as set out in Table 2.1 of the original air quality assessment. Based on this, and in accordance with the IAQM (2017) guidance and professional judgement, the impacts can be considered **'not significant.'**

Addlestone AQMA

5.11. The '2027 Future Baseline' NO_2, PM_{10} and $PM_{2.5}$ concentrations at diffusion tube locations within the Addlestone AQMA, have been compared to the '2027 Future Baseline + Proposed Development' concentrations and the results are set out in Table 5, Table 6 and Table 7. The tables also set out the impact descriptor at each receptor location in line with the assessment matrix set out in Table 3.2 of the original air quality assessment.

Table 5: Option A Predicted NO_2 Impacts within the Addlestone AQMA

Calculated NO_2 Annual Mean (µg/m³)				
Receptor	2027 Baseline	2027 Baseline + Proposed Development	% Change of Objective	Impact Descriptor
RY14	27.7	28.1	1%	Negligible
RY60	25.5	25.7	0%	Negligible

Note: **Bold** indicates exceedance of the NO_2 annual mean objective.

Table 6: Option A Predicted PM_{10} Impacts within the Addlestone AQMA

Calculated PM_{10} Annual Mean (µg/m³)				
Receptor	2027 Baseline	2027 Baseline + Proposed Development	% Change of Objective	Impact Descriptor
RY14	20.6	20.7	0%	Negligible
RY60	20.9	20.9	0%	Negligible

Note: **Bold** indicates exceedance of the PM_{10} annual mean objective.

Table 7: Option A Predicted $PM_{2.5}$ Impacts within the Addlestone AQMA

Calculated $PM_{2.5}$ Annual Mean (µg/m³)				
Receptor	2027 Baseline	2027 Baseline + Proposed Development	% Change of Objective	Impact Descriptor
RY14	13.5	13.6	0%	Negligible
RY60	13.6	13.7	0%	Negligible

Note: **Bold** indicates exceedance of the $PM_{2.5}$ annual mean objective.

NO_2

5.12. The modelled NO_2 concentrations in Table 5 show that NO_2 concentration at all specified diffusion tube locations, are predicted to be below the annual mean objective (40 µg/m³).

5.13. Using the matrix in Table 3.2 of the original air quality assessment, it can be seen that the impacts associated with the Proposed Development are anticipated to be **negligible (adverse)** at all diffusion tube locations.

5.14. Based on the annual average mean concentration at all reports being below 60 µg/m³, it is unlikely that any receptor identified would experience an exceedance of the 1-hour mean objective.

PM_{10}

5.15. The modelled PM_{10} concentrations in Table 6 do not predict any exceedances of the annual mean objective (40 µg/m³) at any of the specified diffusion tube locations. Using the matrix in Table 3.2 of the original air quality assessment, it can be seen that the impacts are anticipated to be **negligible (adverse)**.

5.16. For PM_{10}, the following equation can be used to derive the number of days that the 24-hour mean objective (50 µg/m³) is likely to be exceeded.

$$\text{Num. 24-hour exceedances} = -18.5 + 0.00145 \times \text{annual mean}^3 + \left(\frac{206}{\text{annual mean}}\right)$$

5.17. There are limitations to this calculation, and this is set out in LAQM.TG(16), which states:

> *"The relationship does have limitations in so far that it should not be applied when the annual mean PM_{10} concentration is lower than 14.8 µg/m³".*

5.18. On the basis that all receptors are above 14.8 µg/m³, concentrations can be used to inform whether the 24-hour mean objective will be exceeded or not. The highest concentration is predicted to be 20.9 µg/m³ at RY60. Based on the formula above, this predicts 4.7 exceedance days, which is below the 35-days annual limit. It is therefore thought that none of the diffusion tube locations would be exposed to any material impact from the short-term concentrations of PM_{10}.

$PM_{2.5}$

5.19. The modelled $PM_{2.5}$ concentrations for both options in Table 7 do not predict any exceedances of the Stage 2 Post 2020 annual mean objective (20 µg/m³) at any of the diffusion tube locations. Using the matrix in Table 3.2 of the original air quality assessment, it can be seen that the impacts are anticipated to be **negligible (adverse)**.

Significance of Impacts

5.20. As set out above, the impacts on diffusion tube concentrations associated with the Proposed Development are anticipated to be negligible (adverse) for NO_2, PM_{10} and $PM_{2.5}$ concentrations. The concentrations do not exceed the relevant national objectives as set out in Table 2.1 of the original air quality assessment. Based on this, and in accordance with the IAQM (2017) guidance and professional judgement, the impacts can be considered **'not significant.'**

Weybridge AQMA

5.21. The '2027 Future Baseline' NO_2, PM_{10} and $PM_{2.5}$ concentrations at diffusion tube locations within the Weybridge AQMA, have been compared to the '2027 Future Baseline + Proposed Development' concentrations and the results are set out in Table 8, Table 9 and Table 10 below. The tables also set out the impact descriptor at each receptor location in line with the assessment matrix set out in Table 3.2 of the original air quality assessment.

Table 8: Option A Predicted NO_2 Impacts within the Weybridge AQMA

Calculated NO_2 Annual Mean (µg/m^3)				
Receptor	2027 Baseline	2027 Baseline + Proposed Development	% Change of Objective	Impact Descriptor
WB7	26.1	26.3	0%	Negligible
WB5	22.4	22.5	0%	Negligible
WB6	23.7	23.8	0%	Negligible
WB10	25.7	25.8	0%	Negligible
WB11	25.7	25.8	0%	Negligible
WB12	25.7	25.8	0%	Negligible
WB13	24.2	24.3	0%	Negligible
WB14	24.2	24.3	0%	Negligible
WB15	24.2	24.3	0%	Negligible
WB1	22.8	22.9	0%	Negligible
WHS1	25.7	25.8	0%	Negligible
WHS2	24.2	24.3	0%	Negligible

Note: **Bold** indicates exceedance of the NO_2 annual mean objective.

Table 9: Option A Predicted PM_{10} Impacts within the Weybridge AQMA

Calculated PM_{10} Annual Mean (µg/m^3)				
Receptor	2027 Baseline	2027 Baseline + Proposed Development	% Change of Objective	Impact Descriptor
WB7	18.5	18.6	0%	Negligible
WB5	17.2	17.2	0%	Negligible
WB6	18.7	18.7	0%	Negligible
WB10	19.6	19.7	0%	Negligible

Calculated PM_{10} Annual Mean ($\mu g/m^3$)				
Receptor	2027 Baseline	2027 Baseline + Proposed Development	% Change of Objective	Impact Descriptor
WB11	19.6	19.7	0%	Negligible
WB12	19.6	19.7	0%	Negligible
WB13	18.9	19.0	0%	Negligible
WB14	18.9	19.0	0%	Negligible
WB15	18.9	19.0	0%	Negligible
WB1	18.3	18.3	0%	Negligible
WHS1	19.6	19.7	0%	Negligible
WHS2	18.9	19.0	0%	Negligible

Note: **Bold** indicates exceedance of the PM_{10} annual mean objective.

Table 10: Option A Predicted $PM_{2.5}$ Impacts within the Weybridge AQMA

Calculated $PM_{2.5}$ Annual Mean ($\mu g/m^3$)				
Receptor	2027 Baseline	2027 Baseline + Proposed Development	% Change of Objective	Impact Descriptor
WB7	12.4	12.4	0%	Negligible
WB5	11.6	11.6	0%	Negligible
WB6	12.4	12.4	0%	Negligible
WB10	12.9	13.0	0%	Negligible
WB11	12.9	13.0	0%	Negligible
WB12	12.9	13.0	0%	Negligible
WB13	12.5	12.6	0%	Negligible
WB14	12.5	12.6	0%	Negligible
WB15	12.5	12.6	0%	Negligible
WB1	12.2	12.2	0%	Negligible
WHS1	12.9	13.0	0%	Negligible
WHS2	12.5	12.6	0%	Negligible

Note: **Bold** indicates exceedance of the $PM_{2.5}$ annual mean objective.

NO_2

5.22. The modelled NO_2 concentrations in Table 8 show that NO_2 concentration at all specified diffusion tube locations, are predicted to be below the annual mean objective (40 $\mu g/m^3$).

5.23. Using the matrix in Table 3.2 of the original air quality assessment, it can be seen that the impacts associated with the Proposed Development are anticipated to be **negligible (adverse)**at all diffusion tube locations.

5.24. Based on the annual average mean concentration at all reports being below 60 µg/m^3, it is unlikely that any receptor identified would experience an exceedance of the 1-hour mean objective.

PM_{10}

5.25. The modelled PM_{10} concentrations in Table 9 do not predict any exceedances of the annual mean objective (40 µg/m^3) at any of the diffusion tube locations. Using the matrix in Table 3.2 of the original air quality assessment, it can be seen that the impacts are anticipated to be **negligible (adverse)**.

5.26. For PM_{10}, the following equation can be used to derive the number of days that the 24-hour mean objective (50 µg/m^3) is likely to be exceeded.

$$\text{Num. 24-hour exceedances} = -18.5 + 0.00145 \times \text{annual mean}^3 + \left(\frac{206}{\text{annual mean}}\right)$$

5.27. There are limitations to this calculation, and this is set out in LAQM.TG(16), which states:

> *"The relationship does have limitations in so far that it should not be applied when the annual mean PM_{10} concentration is lower than 14.8 µg/m^3".*

5.28. On the basis that all receptors are above 14.8 µg/m^3, concentrations can be used to inform whether the 24-hour mean objective will be exceeded or not. The highest concentration is predicted to be 19.7 µg/m^3 at WB10/WB11/WB12 (triplicate site) and WHS1. Based on the formula above, this predicts 3.1 exceedance days, which is below the 35-days annual limit. It is therefore thought that none of the diffusion tube locations would be exposed to any material impact from the short-term concentrations of PM_{10}.

$PM_{2.5}$

5.29. The modelled $PM_{2.5}$ concentrations for both options in Table 10 do not predict any exceedances of the Stage 2 Post 2020 annual mean objective (20 µg/m^3) at any of the diffusion tube locations. Using the matrix in Table 3.2 of the original air quality assessment, it can be seen that the impacts are anticipated to be **negligible (adverse)**.

Significance of Impacts

5.30. As set out above, the impacts on diffusion tube concentrations associated with the Proposed Development are anticipated to be negligible (adverse) for NO_2, PM_{10} and $PM_{2.5}$ concentrations. The concentrations do not exceed the relevant national objectives as set out in Table 2.1 of the original air quality assessment. Based on this, and in accordance with the IAQM (2017) guidance and professional judgement, the impacts can be considered **'not significant.'**

Option B

Sensitive Receptors

5.31. The '2027 Future Baseline' NO_2, PM_{10} and $PM_{2.5}$ concentrations at the previously specified human receptor locations, have been compared to the '2027 Future Baseline + Proposed Development' concentrations and the results are set out Table 11, Table 12 and Table 13. The tables also set out the impact descriptor at each receptor location in line with the assessment matrix set out in Table 3.2 of the original air quality assessment.

Table 11: Option B Predicted NO_2 Impacts at Specified Receptors

Calculated NO_2 Annual Mean (µg/m^3)				
Receptor	2027 Baseline	2027 Baseline + Proposed Development	% Change of Objective	Impact Descriptor
R1	30.1	30.2	0%	Negligible
R2	14.8	15.2	1%	Negligible
R3	15.9	15.9	0%	Negligible
R4	15.0	15.3	1%	Negligible
R5	17.0	17.0	0%	Negligible
R6	18.0	18.2	0%	Negligible
R7	22.2	22.4	1%	Negligible
R8	20.8	20.9	0%	Negligible
R9	22.4	22.5	0%	Negligible
R10	24.3	24.6	1%	Negligible
R11	22.1	22.3	0%	Negligible
R12	23.7	24.0	1%	Negligible
R13	16.3	16.3	0%	Negligible
R14	19.0	19.2	0%	Negligible
R15	20.2	20.3	0%	Negligible

Note: **Bold** indicates exceedance of the NO_2 annual mean objective.

Table 12: Option B Predicted PM_{10} Impacts at Specified Receptors

Calculated PM_{10} Annual Mean (µg/m^3)				
Receptor	2027 Baseline	2027 Baseline + Proposed Development	% Change of Objective	Impact Descriptor
R1	20.1	20.1	0%	Negligible
R2	14.8	15.0	0%	Negligible
R3	15.1	15.1	0%	Negligible
R4	14.9	15.0	0%	Negligible
R5	15.8	15.8	0%	Negligible
R6	15.8	15.9	0%	Negligible
R7	17.8	17.9	0%	Negligible
R8	16.6	16.6	0%	Negligible
R9	18.4	18.4	0%	Negligible
R10	17.9	18.0	0%	Negligible
R11	17.2	17.2	0%	Negligible

Calculated PM_{10} Annual Mean ($\mu g/m^3$)				
Receptor	2027 Baseline	2027 Baseline + Proposed Development	% Change of Objective	Impact Descriptor
R12	18.1	18.2	0%	Negligible
R13	15.6	15.6	0%	Negligible
R14	16.0	16.1	0%	Negligible
R15	17.4	17.5	0%	Negligible

Note: **Bold** indicates exceedance of the PM_{10} annual mean objective.

Table 13: Option B Predicted $PM_{2.5}$ Impacts at Specified Receptors

Calculated $PM_{2.5}$ Annual Mean ($\mu g/m^3$)				
Receptor	2027 Baseline	2027 Baseline + Proposed Development	% Change of Objective	Impact Descriptor
R1	13.1	13.1	0%	Negligible
R2	10.1	10.2	0%	Negligible
R3	10.4	10.4	0%	Negligible
R4	10.2	10.2	0%	Negligible
R5	10.7	10.7	0%	Negligible
R6	10.7	10.7	0%	Negligible
R7	11.7	11.8	0%	Negligible
R8	11.1	11.1	0%	Negligible
R9	12.0	12.1	0%	Negligible
R10	11.8	11.9	0%	Negligible
R11	11.4	11.4	0%	Negligible
R12	12.2	12.2	0%	Negligible
R13	10.8	10.8	0%	Negligible
R14	10.8	10.8	0%	Negligible
R15	11.8	11.8	0%	Negligible

Note: **Bold** indicates exceedance of the $PM_{2.5}$ annual mean objective.

NO_2

5.32. The modelled NO_2 concentrations in Table 11 show that NO_2 concentration at all specified residential receptor locations, for both options, are below the annual mean objective (40 $\mu g/m^3$).

5.33. Using the matrix in Table 3.2 of the original air quality assessment, it can be seen that the impacts associated with the Proposed Development are anticipated to be **negligible (adverse)** at all receptors.

5.34. Based on the annual average mean concentration at all reports being below 60 $\mu g/m^3$, it is unlikely that any receptor identified would experience an exceedance of the 1-hour mean objective.

PM_{10}

5.35. The modelled PM_{10} concentrations in Table 12 do not predict any exceedances of the annual mean objective (40 µg/m^3) at any of the specified receptor locations. Using the matrix in Table 3.2 of the original air quality assessment, it can be seen that the impacts are anticipated to be **negligible (adverse)**.

5.36. For PM_{10}, the following equation can be used to derive the number of days that the 24-hour mean objective (50 µg/m^3) is likely to be exceeded:

$$\text{Num. 24-hour exceedances} = -18.5 + 0.00145 \times \text{annual mean}^3 + \left(\frac{206}{\text{annual mean}}\right)$$

5.37. There are limitations to this calculation, and this is set out in LAQM.TG(16), which states:

> *"The relationship does have limitations in so far that it should not be applied when the annual mean PM_{10} concentration is lower than 14.8 µg/m^3".*

5.38. On the basis that all receptors are above 14.8 µg/m^3, concentrations can be used to inform whether the 24-hour mean objective will be exceeded or not. The highest concentration is predicted to be 20.1 µg/m^3 at Receptor R1. Based on the formula above, this predicts 3.6 exceedance days, which is below the 35-days annual limit. It is therefore thought that none of the receptors would be exposed to any material impact from the short-term concentrations of PM_{10}.

$PM_{2.5}$

5.39. The modelled $PM_{2.5}$ concentrations for both options in Table 13 do not predict any exceedances of the Stage 2 Post 2020 annual mean objective (20 µg/m^3) at any of the specified receptor locations. Using the matrix in Table 3.2 of the original air quality assessment, it can be seen that the impacts are anticipated to be **negligible (adverse)**.

Significance of Impacts

5.40. The impacts on the receptors associated with the Proposed Development are anticipated to be negligible (adverse) for NO_2, PM_{10} and $PM_{2.5}$ concentrations. The concentrations do not exceed the relevant national objectives as set out in Table 2.1 of the original air quality assessment. Based on this, and in accordance with the IAQM (2017) guidance and professional judgement, the impacts can be considered **'not significant.'**

Addlestone AQMA

5.41. The '2027 Future Baseline' NO_2, PM_{10} and $PM_{2.5}$ concentrations at diffusion tube locations within the Addlestone AQMA, have been compared to the '2027 Future Baseline + Proposed Development' concentrations and the results are set out in Table 14, Table 15 and Table 16. The tables also set out the impact descriptor at each receptor location in line with the assessment matrix set out in Table 3.2 of the original air quality assessment.

Table 14: Option B Predicted NO_2 Impacts within Addlestone AQMA

Calculated NO_2 Annual Mean (µg/m^3)				
Receptor	2027 Baseline	2027 Baseline + Proposed Development	% Change of Objective	Impact Descriptor
RY14	27.7	28.0	1%	Negligible
RY60	25.5	25.7	0%	Negligible

Note: **Bold** indicates exceedance of the NO_2 annual mean objective.

Table 15: Option B Predicted PM_{10} Impacts within Addlestone AQMA

Calculated PM_{10} Annual Mean ($\mu g/m^3$)				
Receptor	2027 Baseline	2027 Baseline + Proposed Development	% Change of Objective	Impact Descriptor
RY14	20.6	20.7	0%	Negligible
RY60	20.9	20.9	0%	Negligible

Note: **Bold** indicates exceedance of the PM_{10} annual mean objective.

Table 16: Option B Predicted $PM_{2.5}$ Impacts within Addlestone AQMA

Calculated $PM_{2.5}$ Annual Mean ($\mu g/m^3$)				
Receptor	2027 Baseline	2027 Baseline + Proposed Development	% Change of Objective	Impact Descriptor
RY14	13.5	13.6	0%	Negligible
RY60	13.6	13.7	0%	Negligible

Note: **Bold** indicates exceedance of the $PM_{2.5}$ annual mean objective.

NO_2

5.42. The modelled NO_2 concentrations in Table 14 show that NO_2 concentration at all specified diffusion tube locations, are predicted to be below the annual mean objective (40 $\mu g/m^3$).

5.43. Using the matrix in Table 3.2 of the original air quality assessment, it can be seen that the impacts associated with the Proposed Development are anticipated to be **negligible (adverse)** at all diffusion tube locations.

5.44. Based on the annual average mean concentration at all reports being below 60 $\mu g/m^3$, it is unlikely that any receptor identified would experience an exceedance of the 1-hour mean objective.

PM_{10}

5.45. The modelled PM_{10} concentrations in Table 15 do not predict any exceedances of the annual mean objective (40 $\mu g/m^3$) at any of the diffusion tube locations. Using the matrix in Table 3.2 of the original air quality assessment, it can be seen that the impacts are anticipated to be **negligible (adverse)**.

5.46. For PM_{10}, the following equation can be used to derive the number of days that the 24-hour mean objective (50 $\mu g/m^3$) is likely to be exceeded.

$$\text{Num. 24-hour exceedances} = -18.5 + 0.00145 \times \text{annual mean}^3 + \left(\frac{206}{\text{annual mean}}\right)$$

5.47. There are limitations to this calculation, and this is set out in LAQM.TG(16), which states:

> *"The relationship does have limitations in so far that it should not be applied when the annual mean PM_{10} concentration is lower than 14.8 $\mu g/m^3$".*

5.48. On the basis that all receptors are above 14.8 $\mu g/m^3$, concentrations can be used to inform whether the 24-hour mean objective will be exceeded or not. The highest concentration is predicted to be 20.9 $\mu g/m^3$ at

RY60. Based on the formula above, this predicts 4.6 exceedance days, which is below the 35-days annual limit. It is therefore thought that none of the diffusion tube locations would be exposed to any material impact from the short-term concentrations of PM_{10}.

$PM_{2.5}$

5.49. The modelled $PM_{2.5}$ concentrations for both options in Table 16 do not predict any exceedances of the Stage 2 Post 2020 annual mean objective (20 µg/m^3) at any of the diffusion tube locations. Using the matrix in Table 3.2 of the original air quality assessment, it can be seen that the impacts are anticipated to be **negligible (adverse)**.

Significance of Impacts

5.50. As set out above, the impacts on diffusion tube concentrations associated with the Proposed Development are anticipated to be **negligible (adverse)** for NO_2, PM_{10} and $PM_{2.5}$ concentrations. The concentrations do not exceed the relevant national objectives as set out in Table 2.1 of the original air quality assessment. Based on this, and in accordance with the IAQM (2017) guidance and professional judgement, the impacts can be considered '**not significant**.'

Weybridge AQMA

5.51. It is anticipated that 44 LDV and 21 HDV AADT will be produced and will travel through the Weybridge AQMA. On this basis, and when considering that Stage 2 of the EPUK & IAQM (2017) criteria is not exceeded, as set out in Section 3 of the original air quality assessment, the impacts on this AQMA can be considered **'insignificant.'**

6. Mitigation Measures – Operational Mitigation

6.1. The results of the impact assessment demonstrated that the air quality concentrations at existing residential receptors in 2027 are predicted to be compliant with the relevant annual mean objectives for NO_2 (40 µg/m^3), PM_{10} (40 µg/m^3) and $PM_{2.5}$ (20 µg/m^3).

6.2. It should be noted that the proposed development is anticipated to be having a **negligible (adverse)** impact for NO_2, PM_{10} and $PM_{2.5}$ at all receptors for both of the traffic options set out in Appendix A. The impacts on the modelled receptors are considered **'not significant'** as set out previously. Any mitigation measures to aid in reducing impacts should be proportionate to the impact of the Proposed Development. This is highlighted in the EPUK & IAQM (2017) guidance, which reiterates the Planning Practice Guidance, stating:

> *"Mitigation options where necessary, will depend on the proposed development and should be proportionate to the likely impact"*

6.3. On the basis the impacts are considered to be **'not significant'** specific measures are not considered necessary.

6.4. Nevertheless, the following mitigation measures will be provided to aid in reducing the air quality impacts as a result of the proposed development:

- Cycle parking will be provided to meet the minimum requirements in local policy;
- EV charging points will be provided on the basis of 10% active and 10% passive; and
- A Travel Plan.

7. Conclusions

7.1. A further air quality modelling exercise, which has considered the updated traffic data, has concluded that the impacts at all modelled receptors will be **negligible (adverse)** for nitrogen dioxide (NO_2) and particulate matter (PM_{10} and $PM_{2.5}$), with all concentrations at all receptors predicted to remain under the current air quality objectives / limits.

7.2. The overall impacts of the proposals would be deemed '**not significant**,' which is in line with the conclusions of the original air quality modelling for the planning application.

7.3. Notwithstanding this, specific mitigation has been outlined in Section 6.

7.4. The proposed development is therefore expected to comply with all relevant national and local air quality policy.

Air & Acoustic Consultants

APPENDICES

APPENDIX A – TRAFFIC DATA

Verification

Table A.1 – 2019 Verification Traffic Flows

Link	Speed (Kph)	2019 Traffic Flows		
		Total Vehicles	HGV	HGV%
Station Road	48	10878	219	2%
A318	48	20509	318	2%
High Street	48	15732	316	2%
Church Road	48	7652	45	1%

Traffic Scenarios

Option A

Table A.2 – 2027 Future Baseline Scenario Traffic Flows

Link	Speed (Kph)	2027 Traffic Flows		
		Total Vehicles	HGV	HGV%
Site Access (Northern site)	32	0	0	0%
Site Access (Southern Site)	32	0	0	0%
Addlestone Road (east of site accesses)	48	2406	33	1%
Addlestone Road (west of site accesses)	48	2406	170	7%
Hamm Moor Lane	48	4464	170	4%
Dashwood Lang Road	32	543	27	5%
Link Road (two way)	48	5182	105	2%
A317 Weybridge Rd (east of Link Rd)	64	24516	682	3%
Link Road (southbound)	48	3704	61	2%
A317 Weybridge Rd (between Link Rd and Link Rd)	64	28669	1071	4%
Link Road (northbound)	48	2332	79	3%
A317 Weybridge Rd (west of Link Rd)	64	28669	1071	4%
Station Road	48	12112	244	2%
Woburn Hill	64	25121	717	3%
A318	48	22164	344	2%
High Street	48	16882	339	2%
Church Road	48	8270	49	1%

Table A.3 – 2027 Future Baseline + Proposed Development Scenario Traffic Flows

Link	Speed (Kph)	2027 Traffic Flows		
		Total Vehicles	HGV	HGV%
Site Access (Northern site)	32	183	10	5%
Site Access (Southern Site)	32	829	45	5%
Addlestone Road (east of site accesses)	48	2426	34	1%
Addlestone Road (west of site accesses)	48	3398	223	7%
Hamm Moor Lane	48	4464	170	4%
Dashwood Lang Road	32	543	27	5%
Link Road (two way)	48	6174	158	3%
A317 Weybridge Rd (east of Link Rd)	64	24678	690	3%
Link Road (southbound)	48	4212	88	2%
A317 Weybridge Rd (between Link Rd and Link Rd)	64	29578	1125	4%
Link Road (northbound)	48	2790	105	4%
A317 Weybridge Rd (west of Link Rd)	64	29578	1125	4%
Station Road	48	12526	266	2%
Woburn Hill	64	25536	739	3%
A318	48	22579	366	2%
High Street	48	17044	348	2%
Church Road	48	8684	71	1%

Option B

Table A.4 – 2027 Future Baseline Scenario Traffic Flows

Link	Speed (Kph)	2027 Traffic Flows		
		Total Vehicles	HGV	HGV%
Site Access (Northern site)	32	0	0	0%
Site Access (Southern Site)	32	0	0	0%
Addlestone Road (east of site accesses)	48	2406	33	1%
Addlestone Road (west of site accesses)	48	2406	170	7%
Hamm Moor Lane	48	4464	170	4%
Dashwood Lang Road	32	543	27	5%
Link Road (two way)	48	5182	105	2%
A317 Weybridge Rd (east of Link Rd)	64	24516	682	3%
Link Road (southbound)	48	3704	61	2%

A317 Weybridge Rd (between Link Rd and Link Rd)	64	28669	1071	4%
Link Road (northbound)	48	2332	79	3%
A317 Weybridge Rd (west of Link Rd)	64	28669	1071	4%
Station Road	48	12112	244	2%
Woburn Hill	64	25121	717	3%
A318	48	22164	344	2%
High Street	48	16882	339	2%
Church Road	48	8270	49	1%

Table A.5 – 2027 Future Baseline + Proposed Development Scenario Traffic Flows

Link	Speed (Kph)	2027 Traffic Flows		
		Total Vehicles	HGV	HGV%
Site Access (Northern site)	32	183	54	30%
Site Access (Southern Site)	32	221	79	36%
Addlestone Road (east of site accesses)	48	2414	36	1%
Addlestone Road (west of site accesses)	48	2803	301	11%
Hamm Moor Lane	48	4464	170	4%
Dashwood Lang Road	32	543	27	5%
Link Road (two way)	48	5579	236	4%
A317 Weybridge Rd (east of Link Rd)	64	24581	703	3%
Link Road (southbound)	48	3905	127	3%
A317 Weybridge Rd (between Link Rd and Link Rd)	64	29295	1191	4%
Link Road (northbound)	48	2790	105	4%
A317 Weybridge Rd (west of Link Rd)	64	29295	1191	4%
Station Road	48	12278	299	2%
Woburn Hill	64	25287	771	3%
A318	48	22330	398	2%
High Street	48	16947	360	2%
Church Road	48	8436	103	1%

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