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Air Quality Technical Note

George Hotel, Huddersfield

GMI Construction PLC

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George Hotel, Huddersfield – Air Quality Assessment Technical Note

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1.0 Introduction

1.1 Background

1.1.1 Enzygo Limited (Ltd) was commissioned by GMI Construction PLC to produce an Air Quality Technical Note in support of the proposed development of the George Hotel, Huddersfield.

1.1.2 Enzygo understands an Air Quality Assessment (AQA) was submitted to Kirklees Council (KC) in 2022 in support of a planning application for the proposed development at the George Hotel, Huddersfield. A revised application is being determined and as such a technical review of the 2022 AQA is required to consider any changes to the proposals, legislation, guidance and the conclusions of the report.

1.1.3 The AQA was produced by Ramboll in December 2022[1] to support the LBC application (ref: 2023/65/90112/E[2]) and Planning application (ref: 2023/48/90024/W[3]) for a hotel consisting of 91 bedrooms. The revised application increases the bedroom allocation slightly to 110 rooms

1.1.4 Since the production of 2022 AQA, policy, background data and guidance have been updated. This technical note provides a summary of potential changes and the influence these may have on the validity and conclusions of 2022 AQA.

1.2 Site Location and Context

1.2.1 The application site is located at the approximate National Grid Reference (NGR): 414420, 416920 and set within the centre of Huddersfield.

The application site is located within Kirklees AQMA 9, declared by Kirklees Metropolitan Council and described as “the designated area incorporates roads bordering and within the Huddersfield Ring Road”. This AQMA was designated in 2017 for exceedances of the annual mean air quality objective (AQO) for nitrogen dioxide (NO_2).

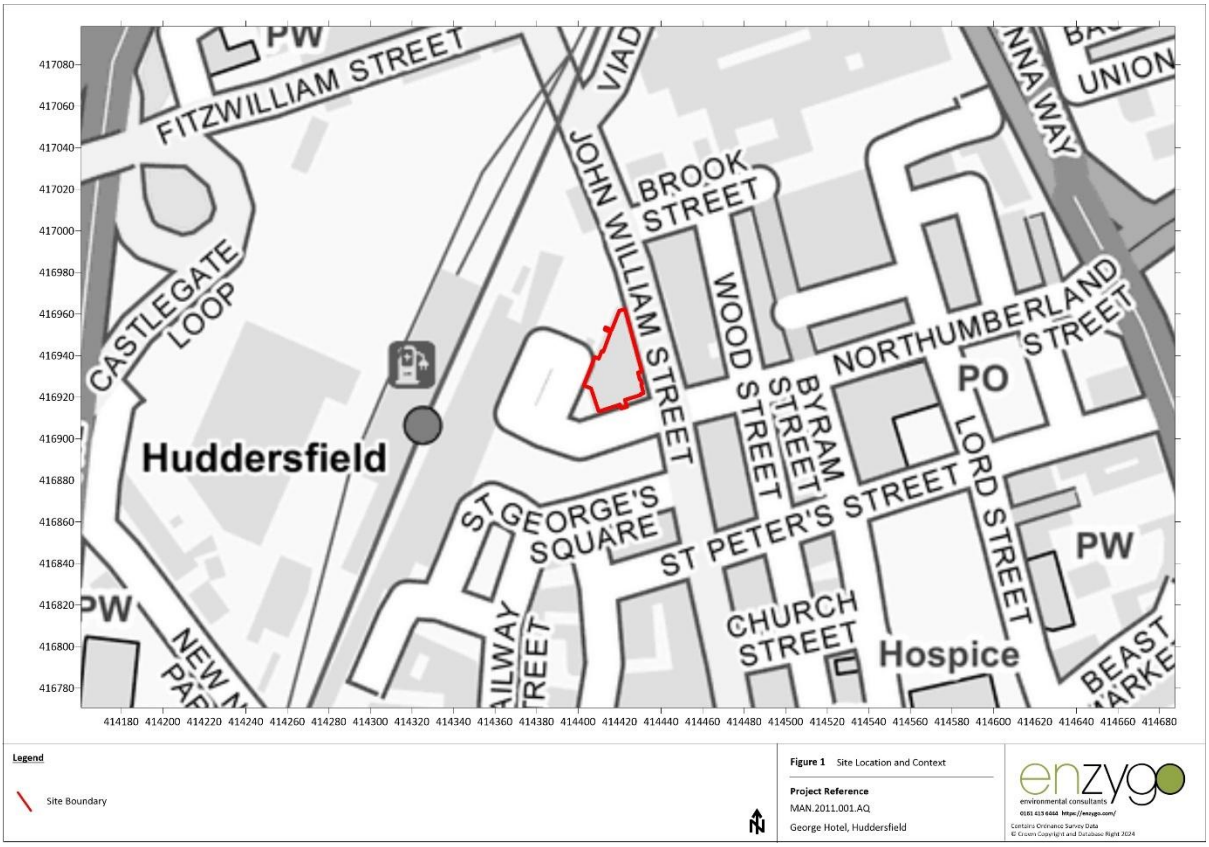
[1] Air Quality Assessment, George Hotel, Huddersfield, Ramboll, 1620014217, December 2022

[2] https://www.kirklees.gov.uk/beta/planning-applications/search-for-planning-applications/detail.aspx?id=2023%2f65%2f90112%2fE

[3] https://www.kirklees.gov.uk/beta/planning-applications/search-for-planning-applications/detail.aspx?id=2023/90024

1.2.2 Figure 1 shows the site location and surrounding context.

Figure 1: Site Location



2.0 Assessment Review

2.1 Policy and Guidance Review

2.1.1 The following policies and guidance used in the assessment have been reviewed in light of policy updates and the revision of the proposals.

National Planning Policy Framework

2.1.2 The 2022 AQA listed the National Planning Policy Framework (NPPF) (2021) as a relevant planning policy, the NPPF has since been updated (2025), however the changes to this policy or the proposals will not affect the outcome of an AQA.

Adopted Kirklees Local Plan

2.1.3 The 2022 AQA listed Kirklees Local Plan remains the current relevant document on which planning decisions are based. The Proposed Development revisions would not change implications of the relevant policies on the conclusions of the AQA.

Emerging Kirklees Local Plan

2.1.4 The Local Plan is currently undergoing a periodic revision and will be updated to set the planning policy framework for the district, guiding future growth and change over the period 2024-2043.

2.1.5 The emerging local plan will consider changes to air quality policy within the district, however no draft policies are available for review at the time of writing this report.

Kirklees Local Air Quality Strategy

2.1.6 The 2022 AQA listed Kirklees Local Air Quality Strategy (2007) as a relevant planning policy. This has been superseded by Kirklees Council Air Quality Strategy 2019. The strategy provides an overarching review of current air quality in Kirklees and the proposed tools to improve air quality. This update or proposed development will not impact the 2022 AQA.

The Kirklees Council Air Quality Action Plan

2.1.7 The 2022 AQA listed Council Air Quality Action Plan remains the current relevant document on the district's actions to improve air quality. The Proposed Development revisions would not change implications of the relevant plan on the conclusions of the AQA.

West Yorkshire Low Emissions Strategy Technical Planning Guidance

2.1.8 The 2022 AQA listed West Yorkshire Low Emissions Strategy (WYLES) Technical Planning Guidance remains the current relevant document on the district's consideration of the assessment of air quality impact of proposed developments and the required mitigation measures.

2.1.9 Whilst this document has not been updated since the 2022 AQA, the revised proposals need to be re-assessed against the criteria provided in this document.

2.2 Construction Phase Dust Risk Assessment

2.2.1 The dust risk assessment produced as part of the 2022 AQA was undertaken in accordance with Institute of Air Quality Management (IAQM) guidance on the Assessment of Dust from Demolition and Construction[4], which is the industry standard approach. The guidance has been

[4] Guidance on the Assessment of Dust from Demolition and Construction, Institute of Air Quality Management, v2.2, 2024.

updated since the undertaking of the current report, however no major amendments to the assessment methodology have taken place.

2.2.2 Section 6.2 of the 2022 Air Quality Assessment provides a construction phase impact assessment of the application and as such the revised development is unlikely to affect the assessed impact risk and resulting dust control measures outlined with Table 23 of the 2022 AQA.

2.2.3 Subsequently, the results of the construction phase dust risk assessment produced for the 2022 AQA remains valid and does not require updating. The proposed control measures also remain appropriate for the proposed construction works and should be retained for the Proposed Development.

2.2.4 In accordance with the IAQM guidance[4], the recommended mitigation strategy set out in the 2022 AQA (Table 23) would sufficiently control fugitive dust releases associated with the Proposed Development and will ensure impacts from construction phase activities are not significant.

2.3 Operational Phase Traffic Impacts

2.3.1 The 2022 AQA considered road traffic emission impacts from additional generated traffic from the proposed development. Notwithstanding a slight increase in the number of proposed bedrooms, there has been no change in the proposed number of parking spaces.

2.3.2 The 2022 AQA states:

> "*users would be expected to travel to Site by public transport (the Site is next to the train station) or if by car parking off Site in one of the existing car parks in Huddersfield. The anticipated trip generation associated with the Development would be 230 AADT including 6 HDVs (servicing vehicles), however these would bespread widely across the Huddersfield road network as off-site car parks would be used. The operational stage traffic impacts on human health in the area are considered (based on professional judgement) to be not significant.*"

2.3.3 Whilst is likely that the total annual average daily traffic (AADT) of 230 could increase marginally it is considered that the overriding judgement and conclusions of the 2022 AQA remain valid.

2.4 Operational Phase Exposure

2.4.1 The 2022 AQA considered site baseline conditions to assess the potential exposure of future site users to pollutants. The following sections provides a summary of changes to current baseline and future baseline conditions, which may affect the conclusions of the 2022 AQA.

Predicted DEFRA Background Concentrations

2.4.2 Table 1 provides a comparison of predicted DEFRA background concentrations used to in the 2022 AQA to represent the operational phase, against most recent prediction provided by DEFRA. The 2022 AQA used predictions from 2015 basemaps, whereas most recent predictions for the Proposed Development are sourced from 2021 basemaps released in November 2024.

Table 1: Comparison of Background Concentration Predictions

Pollutant	Predicted Annual Mean Background Concentration (µg/m³)		
	2024 – 2022 AQA	2024 – 2021 Basemaps	Change
NO_2	18.2	15.6	-2.6
PM_{10}	11.6	11.8	+0.2
$PM_{2.5}$	7.8	7.0	-0.8

2.4.3 As presented in Table 1, future background concentrations provided by DEFRA are expected to improve, with the exception of PM_{10} concentrations which are expected to increase only marginally. As such, it is considered the 2022 AQA utilised a robust scenario with regards to predicted background concentrations. As such, a sufficient level of confidence can be placed upon the predictions of the 2022 AQA.

Monitoring Data

2.4.4 A comparison of air quality monitoring data produced by KC referenced in the 2022 AQA has been provided with updated data obtained from the 2024 Air Quality Status (ASR)[5]. Table 2 details the 2020 monitoring locations and data used within the 2022 AQA compared against the most recent years monitoring data provided in the 2024 ASR[5].

Table 2: Comparison of Monitored Annual Mean Concentrations

2020 ID	2023 ID	Site Name	Monitored Annual Mean NO_2 Concentration (µg/m³)			
			2020	2021	2022	2023
K2	K2	Bus Station – Huddersfield	34.1	42.4	36.9	36.7
K7	K7	Westgate Huddersfield	28.9	36.7	40.0	44.9
K11	K11	Chappel Hill Huddersfield	31.8	31.3	32	27.9
K21	K21	Castlegate	33.4	39.3	37.8	35.7
K28	K28	Ring Road Huddersfield – Southgate	37.6	41.4	41.0	38.1
K56	K56	Wakefield	30.3	37.4	36.1	34.8
K57	K57	Cambridge Road 1	18.5	20.1	20.7	21.8
K58	K58	St John's Road	34.9	37.4	35.9	32.5
K86	K86	Kings Mill Lane	22.8	26.3	24.4	23.8

2.4.5 Elevated NO_2 concentrations were measured at the some monitoring sites between 2020 and 2023 with exceedances of the annual mean AQO at some sites. As these monitoring sites are located within an AQMA elevated concentrations would be expected.

2.4.6 Diffusion tubes only monitor long term exposure and therefore results from this monitoring cannot be used for direct comparison with the short term 1-hour objective for NO_2. However, where annual mean concentrations of more than 60 µg/m^3 are recorded an exceedance of the hourly NO_2 objective is likely. On this basis, it is unlikely that exceedances of the short term one-hour objective have occurred at diffusion tube monitoring locations within the vicinity of the site between 2020 and 2023.

2.4.7 As stated in the 2022 AQA:

> *"Annual mean NAQOs do not generally apply at hotels unless used as a permanent residence, however short-term objectives would apply. Available monitoring data indicates that concentrations of NO_2 are likely to meet the short term NAQO at the development Site when it is operational in 2024. The Site is suitable for the Proposed Development without the need for mitigation."*

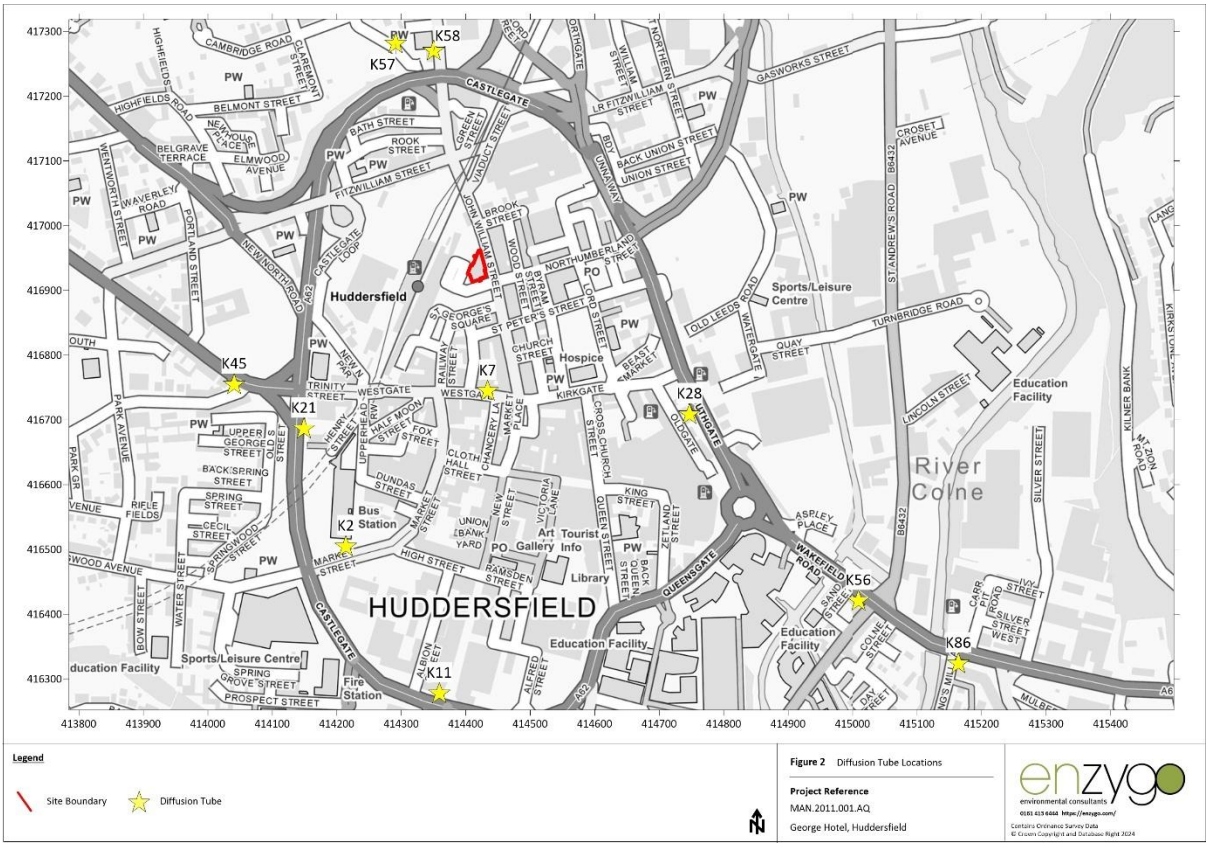
2.4.8 The monitoring data presented in the 2022 AQA shows no annual mean monitoring results exceeding 60 µg/m^3, therefore it can be considered that the assessment from the 2022 AQA remains valid.

2.4.9 Figure 2 shows the monitoring locations used in the 2022 AQA alongside those referenced in

[5] 2024 Air Quality Annual Status Report (ASR), Kirklees Council, June 2024

the latest ASR[5] produced by KC, none of which have been relocated since the 2022 AQA.

Figure 2: ERYC Monitoring Locations



2.5 West Yorkshire Low Emissions Strategy

2.5.1 The WYLES guidance advises on the classification of a development to inform the assessment and mitigation based on size, to inform traffic impacts, and proximity to an AQMA to inform impacts exposure. Whilst the proposals would be above thresholds, as explained in the previous sections the traffic generated by the proposals in general would not be at the development site. In addition, the AQMA is declared for exceedances of the annual mean AQO and the proposals to not introduce any long term exposure to the site. As such, the impacts should not trigger a requirement for a detailed assessment and impacts have been shown to be not significant in the 2022 AQA and upheld within this review.

2.5.2 However, the development should consider the mitigation advice provided in the WYLES guidance. As there is no parking provision at the site and impacts would be spread over a wider area and the site has very good public transport links, electric vehicles charging and many transport plan mitigation measures would not be feasible.

2.5.3 However it is recommended that travel plan measures are included to help mitigate any impacts from associated vehicles. These could focus on the commercial development specific measures suggested in the WYLES guidance, for example:

- All commercial vehicles should comply with current or the most recent European Emission Standards from scheme opening, to be progressively maintained for the lifetime of the development.
- Fleet operations should provide a strategy for reducing emissions, including the uptake of low emission fuels and technologies such as ultra-low emission service vehicles.

2.5.4 A bespoke transport plan can be provided as a condition of planning approval.

3.0 Summary of Updates and Conclusion

3.1.1 This section considers potential changes in the proposed development, data, and guidance since the production of the 2022 Air Quality Assessment. The review of the 2022 AQA and the revised Proposed Development has found that:

- Policy and guidance used in the 2022 remain valid and updates would not affect the conclusions;
- The construction dust risk assessment and proposed control measures in the 2022 AQA remain valid;
- The traffic impacts conclusions of the 2022 AQA remain valid and not significant; and
- Background and monitored data updates indicate that the 2022 AQA assessment of site exposure can be relied on as valid and not significant.

3.1.2 However travel plan mitigation measures should be considered.

4.0 Abbreviations

AADT	Annual Average Daily Traffic
AQA	Air Quality Assessment
AQMA	Air Quality Management Area
AQO	Air Quality Objective
DEFRA	Department for Environment, Food and Rural Affairs
IAQM	Institute of Air Quality Management
KC	Kirklees Council
LAQM	Local Air Quality Management
NGR	National Grid Reference
NO_2	Nitrogen Dioxide
NPPF	National Planning Policy Framework
PM_{10}	Particulate Matter with an aerodynamic diameter less than 10mm
$PM_{2.5}$	Particulate Matter with an aerodynamic diameter less than 2.5mm
WYLES	West Yorkshire Low Emission Strategy