DUST MANAGEMENT PLAN
EDGAR WOOD ACADEMY
HEYWOOD OLD ROAD, MIDDLETON
WATES CONSTRUCTION LTD
DMP-22257-21-61
FEBRUARY 2021



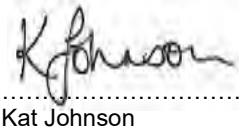
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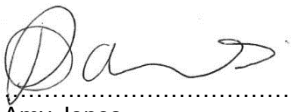
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SECTION 1 INTRODUCTION

1.1 Wates Construction Limited (Wates) are developing Edgar Wood School to the east of Heywood Old Road, Middleton in Greater Manchester. The proposed development comprises the construction of a new 900 place secondary school with associated parking, sports provision and landscaping. The Masterplan layout is included in Appendix 1.

1.2 IDOM Merebrook Limited (IDOM) have been commissioned by Wates Construction Limited (Wates) to produce a Dust Management Plan (DMP) for incorporation within a wider Construction Management Plan (CMP) to satisfy Planning Condition 17 (f) of planning permission reference 20/00912/OUT.

1.3 The objectives of the investigation are to:

i. Establish baseline air quality from a desk-based review of published data sources;

ii. Identify sensitive receptors in the vicinity of the site;

iii. Identify potential air quality impacts associated with the construction phase;

iv. Where any significant air quality issues associated with the proposed developments are identified provide recommendations for mitigation/monitoring.

1.4 The scope of this assessment has been agreed with Richard Chapman, Senior Transport Strategy & Projects Officer at Rochdale Borough Council (RBC).

1.5 This assessment has been undertaken with reference to guidance issued by the Institute of Air Quality Management (IAQM) entitled *'Guidance on the assessment of dust from demolition and construction'* and '*Guidance on Monitoring in the Vicinity of Demolition and Construction Sites*' published in 2014 and 2018 respectively.

1.6 This report has been prepared for Wates for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties making reference to the report should consult Wates and IDOM as to the extent to which the findings may be appropriate for their use.

SECTION 2 SITE SETTING

2.1 The site is situated to the east of Heywood Old Road, Middleton and is centred at approximate National Grid Reference (NGR) ^{3}58788, ^{1}73509 as indicated on drawing 22077-001-001 in Appendix 1.

2.2 The site is currently undeveloped farmland bounded by Whittle Brook to the north; farmland to the east with residential properties beyond; Bowlee Park to the south; and, farmland to the west with Heywood Old Road and residential properties to the northwest. The surrounding area predominantly comprises farmland.

SECTION 3 PROPOSED WORKS

3.1 Ground works are due to commence in May 2021 and construction of the superstructure is due be completed by March 2022.

3.2 Works with potential for dust release can be summarised, but not limited to, the following:

i. Topsoil strip, stockpiling and subsequent removal from site;

ii. Reprofiling of the site;

iii. Formation of piling mat and subsequent piling works;

iv. Excavation and casting of foundations with excess arisings removed from site;

v. Construction of buildings using modern methods of construction (off-site fabrication);

vi. Installation of services including drainage; and,

vii. External hard and soft landscaping.

SECTION 4 LEGISLATIVE CONTEXT

4.1 POLLUTANTS OF CONCERN

4.1.1 Dust comprises solid particles that are suspended in air, or have settled out onto a surface after having been suspended in air. For the purpose of this report, the term 'dust' has been used to include the particles that give rise to soiling, and to human health and ecological effects. Dust deposition rates are influenced by meteorological conditions.

4.1.2 PM_{10} comprises the proportion of airborne particulate matter that is less than 10 µm in diameter. This includes fine particles of less than 2.5 µm diameter ($PM_{2.5}$), which can penetrate deeper into the lungs than coarser particles and are becoming increasingly associated with the health effects of particulate pollution. Fine particles are emitted by combustion processes, non-exhaust traffic-related emissions (tyre and brake wear) and also include secondary particles, which are formed in the atmosphere by chemical reactions between other pollutants. The sources of secondary particles can be very distant and include areas outside the UK. The coarser fraction of PM_{10} originates primarily from non-combustion sources.

4.2 LEGISLATION

4.2.1 There are no statutory limits with regards to dust deposition as the level at which nuisance occurs is subjective (based on personal perception) and therefore not easily quantified. Powers exist under Part III of the Environmental Protection Act 1995 to allow any statutory nuisance to be abated and the Local Authority has the power to inspect, and use its reasonable judgement, to identify and act if it considers

any statutory nuisance exists. It is therefore important to ensure that dust levels are kept to a practicable minimum.

4.2.2 The Environment Act also requires Local Authorities to review and document air quality within their area with the aim of meeting specified Air Quality Objectives (AQO) by target years, as defined in the Air Quality (England) Regulations 2000 and Air Quality (England) (Amendment) Regulations 2002 and set out in the UK National Air Quality Strategy 2007. The AQO are designed to be protective of human health and where they are unlikely to be achieved by the target year the Local Authority is required to designate an AQMA. The authority is then obliged to plan for future compliance with the objectives. Guidance is provided in the UK Air Quality Strategy 2007 and the Local Air Quality Management (LAQM) Policy and Technical Guidance (TG16).

4.2.3 Of relevance to this assessment, the AQO for PM_{10} are an annual mean concentration of 40 $\mu g.m^{-3}$ and a 24-hour mean of 50 $\mu g.m^{-3}$ not to be exceeded more than 35 times per year.

4.2.4 The 2008 European Directive on ambient air quality and cleaner air for Europe (2008/50/EC) was published in May 2008. The Directive sets limit values for PM_{10} and $PM_{2.5}$. Achievement of these values is a national obligation rather than a local one The EU limit values are transposed into UK legislation within the Air Quality Standards Regulations 2010. The limit value for PM_{10} is the same as the national AQO but applied from 2005.

4.2.5 The focus of legislation for $PM_{2.5}$ is on limiting long-term exposure through the use of annual standards, coupled with a reduction in $PM_{2.5}$ background concentrations (15 %) in urban areas across the UK between 2010 and 2020. The annual mean limit value of 25 $\mu g.m^{-3}$ for $PM_{2.5}$ is to be achieved by 2015 whereas the national objective is to be achieved by 2020.

4.3 GUIDANCE

4.3.1 The Institute of Air Quality Management (IAQM) has produced non-statutory guidance for the assessment, mitigation and monitoring of dust impacts on construction sites as follows:

i. Holman et al (2014) Guidance on the Assessment of Dust from Demolition and Construction v 1.1; and,

ii. Moorcroft et al (2018) Guidance on Monitoring in the Vicinity of Demolition and Construction Sites v 1.1.

SECTION 5 BASELINE CONDITIONS

5.1 LOCAL AUTHORITY MONITORING DATA

5.1.1 The site is not located within an Air Quality Management Area (AQMA). Reference has been made to the following information sources:

i. 2019 Air Quality Annual Status Report for Greater Manchester;

ii. Greater Manchester Monitoring Results 2019 obtained from Clear Air Greater Manchester (CAGM) website[1].

iii. DEFRA's UK AIR website[2].

5.1.2 The closest automatic monitoring stations measuring concentrations of PM_{10} are Bury Whitefield and Bury Prestwich which are both classified as roadside sites located adjacent to Bury New Road (A56). The table below summarises recent annual mean PM_{10} concentrations at these monitoring sites.

Table 1: A summary of annual mean PM_{10} concentrations from the automatic monitoring stations

Site	Distance to site	Annual Mean Concentration (µg.m^{-3})					
		2016	2017	2018	2019	2020	AQO
Bury Whitefield	4.5 km W	15	15	16	18	16	**40**
Bury Prestwich	5.5 km E	19	19	19	19	-	

* Data capture less than 90%

5.1.3 Annual mean concentrations of PM_{10} at both automatic monitoring sites have been well below the annual mean AQO of 40 µg.m^{-3} in all years reviewed.

5.1.4 There have been no exceedances of the PM_{10} 24-hour mean AQO since at least 2016 at either monitoring site.

5.2 DEFRA BACKGROUND MAPS

5.2.1 Reference has also been made to the UK-AIR background air pollutant concentration maps. The background maps are presented in 1 km x 1 km grid squares across England, Wales, Scotland and Northern Ireland. The current version of the background maps (reference year 2018) contains estimates for NO_x, NO_2, PM_{10} and $PM_{2.5}$ for the period 2018 through to 2030.

5.2.2 The 2018 reference year background maps are based on monitoring and meteorological data for 2018. Predicted background PM_{10} and $PM_{2.5}$ concentrations

[1] https://cleanairgm.com/data-hub/monitoring-reports (accessed 05/02/2021)
[2] https://uk-air.defra.gov.uk/ (accessed 05/02/2021)

for the reference year 2018 and the year construction activities are anticipated to begin (2021) are summarised in the table below.

Table 2: Predicted annual mean background map concentrations for grid square centred at [3]88500, [4]07500.

Pollutant	Annual Mean Concentration (µg.m^{-3})		
	2018	2021	AQO
PM_{10}	11.81	11.25	**40**
$PM_{2.5}$	7.91	7.51	**25**

5.2.3 Predicted annual mean concentrations for PM_{10} and $PM_{2.5}$ for the grid square in which the subject site is situated are predicted to be well below their respective annual mean AQOs in both 2018 and 2021.

5.3 SUMMARY

5.3.1 It is expected concentrations of PM_{10} and $PM_{2.5}$ experienced across the majority of the subject site will be at background levels and therefore well below the annual mean Air Quality Objectives. In close proximity to Heywood Old Road (A6045), annual mean concentrations are likely to be slightly elevated due to vehicle emissions but are still expected to be less than the concentrations recorded at the closest automatic monitoring sites situated adjacent to the more heavily-trafficked A56.

SECTION 6 CONSTRUCTION PHASE RISK ASSESSENT

6.1 GENERAL

6.1.1 The development has the potential to result in emissions of dust and fine particulates (PM_{10} and $PM_{2.5}$) during the construction phase in the absence of appropriate mitigation. Sources of emissions of air pollutants are exhaust from on-site plant and site traffic and dust-generating activities, including earthworks and vehicle movements on dry ground.

6.1.2 The construction phase impacts on local air quality associated with the redevelopment of the site have been assessed in accordance with the IAQM's 2014 guidance.

6.1.3 In terms of vehicle movements within the site (plant exhaust), the impact of emissions would be very small, very localised and limited to vehicles in close proximity to potential receptors. With reference to the IAQM guidance, *'experience of assessing the exhaust emissions from on-site plant and site traffic suggest that they are unlikely to make a significant impact on local air quality and in the vast majority of cases they will not need to be quantitatively assessed'*. Exposure can be minimised by standard good practice.

6.1.4 The IAQM guidance indicates that construction impacts on local air quality can be divided into four key areas:

i. Demolition,

ii. Earthworks,

iii. Construction, and,

iv. Trackout.

6.1.5 Dust Emission Magnitude

6.1.5.1 Potential dust emission magnitude has been assessed for each of the four key areas above in relation to the development site. The dust emission magnitude is based on the scale of the anticipated works and is classified as small, medium, or large. The guidance provides examples of how the potential dust emission magnitude for different activities can be defined.

6.1.6 Demolition

6.1.6.1 As the site is currently undeveloped, no demolition works are required.

6.1.7 Earthworks

6.1.7.1 The total site area is 5.28 hectares. The topography of the site varies, with a general fall from the highest point in the southeast corner (111.5 m AOD) to the lowest point in the northwest corner adjacent to Heywood Old Road (104.50 m AOD).

6.1.7.2 It is estimated that approximately 20,000 tonnes of topsoil will be stripped from the site and transported off-site prior to commencement of site reprofiling.

6.1.7.3 The steepest area of land is across the southern boundary falling from 111.5 m AOD to 106 m AOD across 170 m length. Drawing EWA-CUR-XX-00-DR-C-91601-P03 presented in Appendix 1 shows the proposed earthworks required to create the development platform. The greatest amount of excavation is required in the south of the site. The total amount of material to be moved is estimated to be approximately 40,000 tonnes.

6.1.7.4 Excavations will also be required for installation of roads, drainage and other infrastructure.

6.1.7.5 With reference to the ground investigation report topsoil and subsoil were encountered across the site and made ground, where encountered, was described as slightly gravelly clay. Superficial deposits were recorded as a soft to very stiff, occasionally sandy and silty, gravelly clay. Granular superficial deposits were also recorded across the whole site (typically beneath the clay) described as fine to coarse occasionally slightly clayey sand, occasionally interbedded with clay.

6.1.7.6 In its 'as-dug' state the dust generation potential of the clay is likely to be low due to the inherent moisture content. However, the dust-generation potential will increase as the material dries out, particularly where it is tracked over by vehicles and plant.

6.1.7.7 The potential dust emission magnitude in the absence of mitigation is conservatively assessed as 'large'.

6.1.8 Construction

6.1.8.1 The scheme consists of two buildings; a three-storey main teaching block and a separate sports building linked by a covered walkway. External footpaths and secondary routes will be formed from tarmac, with key destination points (main entrance plaza) highlighted with bands of contrasting high-quality concrete block paving.

6.1.8.2 The building construction is effectively a 'kit of parts' fabricated off-site and assembled on-site using modern construction methods. The proposed façades of the school comprise two materials; aluminium raised-seam cladding and fibre-cement rainscreen cladding. Curtain wall glazing will also be incorporated for key spaces.

6.1.8.3 The potential dust emission magnitude in the absence of mitigation is assessed as 'small'.

6.1.9 Trackout

6.1.9.1 Trackout dust impacts are associated with heavy-duty vehicles (HDVs) leaving the site after moving over unpaved ground where they will accumulate mud and dirt that can then be tracked out onto the public highway. Trackout impacts are linked to the number of outward HDV movements over the course of a day.

6.1.9.2 The maximum number of outward movements of HDVs in any one day is anticipated to be between 10 – 50. The length of internal unpaved road is anticipated to be greater than 100 m. As noted in the earthworks section, the subsurface is expected to contain a high clay content and is therefore considered to have a high-dust generation potential when tracked over by construction vehicles. It is expected that a hard-surfaced haul road will be installed early in the construction programme which will reduce the potential for dust-generation.

6.1.9.3 A single site access will be utilised off Heywood Old Road which forms the north western site boundary. The anticipate HDV route is not known, however, for the purpose of this assessment it has been assumed that HDVs can travel both north and south along Heywood Old Road upon leaving the site.

6.1.9.4 The potential dust emission magnitude in the absence of mitigation is conservatively assessed as **'**large**'**.

6.1.10 Summary

6.1.10.1 A summary of the assessed dust emission magnitude for each of the site activities is displayed in Table 3 below.

Table 3: Summary of the potential Dust Emission Magnitude

Activity	Dust Emission Magnitude
Demolition	n/a
Earthworks	Large
Construction	Small
Trackout	Large

6.2 **SENSITIVITY OF THE AREA**

6.2.1 Introduction

6.2.1.1 The following assessment of site sensitivity has been undertaken using the IAQM methodology. A number of residential properties have been identified to the north of the development site adjacent to Heywood Old Road. A residential development is also present approximately 150 m to the east. Aside from these high sensitivity receptors, the immediate surrounding area is primarily low-sensitivity agricultural or parkland.

6.2.1.2 The overall sensitivity of the area (as determined by the number and sensitivity of receptors within a given distance) is summarised in the following sections.

6.2.2 Dust Soiling Effects

6.2.2.1 Nuisance dust is defined here as all particulate matter less than 75 µm but greater than 10 µm diameter, comprising both suspended and deposited dust.

6.2.2.2 The sensitivity of receptors to dust soiling effects is dependent upon the duration and frequency that people would expect to be exposed to the effects. Residential receptors can be expected to enjoy a high level of amenity and background levels of dust soiling are expected to be low. It can be expected that dust soiling would diminish the aesthetics of their property and such receptors are therefore assessed as being of high sensitivity. Residential properties, schools, nurseries and care homes are considered to be of high sensitivity for the purpose of this assessment.

6.2.2.3 Medium sensitivity receptors are those where users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home or people or property would not reasonably be expected to be present here continuously or regularly for extended periods as part of the

normal pattern of use of the land. Places of work and community uses are considered to be of medium sensitivity for the purpose of this assessment.

6.2.2.4 Low sensitivity receptors are those where the enjoyment of amenity would not reasonably be expected or property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling. Exposure is of a transient nature and people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land.

6.2.2.5 With reference to aerial imagery no high sensitivity receptors are present within 20 m of the site boundary but approximately four dwellings are present within 50 m and thirteen within 100 m.

6.2.2.6 For trackout effects, receptors within 50 m from the edge of the proposed routes for construction traffic up to 500 m from the site entrances have been considered. It has been estimated that approximately 30 dwellings and one public house are present within 20 m of Heywood Old Road (upon exiting north from the site) which could potentially be affected by trackout impacts in the absence of mitigation. Upon exiting the site to the south, only two dwellings have been identified within 20 m of the road.

6.2.2.7 The sensitivity of the surrounding area with regards to dust soiling effects is considered to be 'low' for activities undertaken on the site itself and 'high' in respect of trackout impacts.

6.2.3 Human Health

6.2.3.1 For health effects of PM_{10}, sensitivities are based on whether or not the receptor is likely to be exposed to elevated concentrations over a 24-hour period.

6.2.3.2 High sensitivity receptors are those locations where members of the public are exposed over a time period relevant to the air quality objective for PM_{10} (eight hours or more in a 24-hour period). Indicative examples include residential properties, hospitals, schools, nurseries and residential care homes.

6.2.3.3 Workers are considered to be of medium sensitivity for the purpose of this assessment and low sensitivity receptors are those locations where human exposure is transient e.g. public footpaths, playing fields, parks and shopping streets.

6.2.3.4 With reference to DEFRA background maps, annual mean concentrations of PM_{10} are predicted to be well below the annual mean AQO in 2021 (11.25 $\mu g.m^{-3}$). Roadside receptors will experience elevated concentrations of PM_{10} as a result of road traffic contributions. However, with reference to Section 5.1 above, roadside concentrations at the automatic monitoring sites adjacent to the A56, are still well below 24 $\mu g.m^{-3}$.

6.2.3.5 Taking into consideration the anticipated low baseline PM_{10} concentration in the local area, combined with the number and proximity of sensitive receptors identified in the dust soiling section above, the sensitivity of the surrounding area with regards to

human health impacts for both activities undertaken on site and associated with trackout dust is assessed as 'low'.

6.2.4 Ecological Sensitivity

6.2.4.1 An 'ecological receptor' refers to any sensitive habitat affected by dust soiling. This includes the direct impacts on vegetation or aquatic ecosystems of dust deposition, and the indirect impacts on fauna (e.g. on foraging habitats).

6.2.4.2 Dust can have two types of effect on vegetation: physical and chemical. Direct physical effects include reduced photosynthesis, respiration and transpiration through smothering. Chemical changes to soils or watercourses may lead to a loss of plants or animals for example via changes in acidity. Indirect effects can include increased susceptibility to stresses such as pathogens and air pollution. These changes are likely to occur only as a result of long-term demolition and construction works adjacent to a sensitive habitat. Often impacts will be reversible once the works are completed, and dust emissions cease.

6.2.4.3 With reference to the Multi-agency Geographic Information for the Countryside (MAGIC) website[3], there are no designated ecological sites within 50 m of the site boundary or within 50 m of the anticipated routes to be used by construction traffic.

6.2.4.4 No risk to sensitive habitats or plant communities is therefore considered to exist.

6.2.5 Summary

6.2.5.1 The sensitivity of identified receptors in the vicinity of the site and anticipated trackout route is summarised in the table below.

Table 4: Summary of the sensitivity of the surrounding area

Potential Impact	Sensitivity of the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	n/a	Low	Low	High
Human Health	n/a	Low	Low	Low
Ecological	n/a	n/a	n/a	n/a

6.2.5.2 The potential dust emissions magnitude for each of the site activities has been combined with the sensitivity of the surrounding area to summarise the risk of dust impacts with no mitigation. This in turn determines the level of mitigation which must be applied. The dust risk is summarised in Table 5 below.

[3] www.magic.gov.uk

Table 5: Summary of Risk of Impacts

	Demolition	Earthworks	Construction	Trackout
Dust Soiling	n/a	Low Risk	Negligible	High Risk
Human Health	n/a	Low Risk	Negligible	Low Risk
Ecological	n/a	n/a	n/a	n/a

6.2.5.3 The number of receptors present in close proximity to the site is relatively low (13 dwellings within 150 m). The risk of dust impacts arising from activities occurring on site is therefore assessed as negligible to low, even in the absence of mitigation. There are however, a large number of residential properties within 20 m of Heywood Old Road upon exiting the site towards the north (up to 500 m from the site entrance). Consequently, the risk of trackout dust impacts in the absence of mitigation is assessed as 'high' and requires appropriate mitigation.

SECTION 7 DUST MANAGEMENT PLAN

7.1 INTRODUCTION

7.1.1 The IAQM guidance provides recommendations for mitigation measures commensurate with the risk of dust impacts. The following Dust Management Plan (DMP) has been developed in line with measures recommended in the guidance.

7.1.2 The Project Manager will play an important role on site in managing and maintaining communications between stakeholders, the community and RBC. The Project Manager will be a constant point of contact for any queries and will handle any on-site complaints.

7.1.3 Plans of programmed works will be communicated in advance with neighbouring parties.

7.1.4 A site notice will be displayed at all times highlighting the names and contact details of all key personnel responsible for the site.

7.1.5 Wates are a member of, and actively support the Considerate Contractors Scheme. As part of continual commitment to the Considerate Contractors Scheme, they will strive to ensure this project achieves the highest possible level of compliance.

7.1.6 Where dust is considered to be a risk during a specific site activity, mitigation measures will be included in the task-specific method statement and risk assessment for the work.

7.2 MITIGATION MEASURES

7.2.1.1 Preparation and maintenance of the site

i. Machinery and plant will be positioned where possible away from any sensitive receptors (namely those to the northwest of the site along Heywood Old Road);

ii. Stockpiling will be avoided where possible in the north of the site in close proximity to the neighbouring residential properties;

iii. The nominated person will ensure that dust from stored materials, haul roads and other stripped areas is managed by covering storage areas, damping down material and haul roads and anticipating potential problems by being aware of how project operations link with weather forecasts;

iv. Run-off of water and mud will be prevented by early installation of hardstandings and localised bunding if required; and,

v. Materials that have the potential to produce dust from site will be removed as soon as possible unless being re-used on site. If being retained on site they will be covered or damped down to prevent dust release.

7.2.1.2 Operating vehicle/machinery and sustainable travel

i. Construction plant will be well maintained and operated to minimise emissions to air. The Site Manager will brief operatives on good practice within the site induction and will carry out regular inspections to ensure that best practice means are employed across the project;

ii. Use of low sulphur diesel fuel will be encouraged on all site mechanical plant;

iii. A site policy will be implemented such that that no vehicles are left idling and engines are switched off when not in use;

iv. A speed limit of no more than 10 mph will be enforced on site; and,

v. The use of generators will be avoided by using mains electricity or battery powered equipment where practicable.

7.2.1.3 Operations

i. Only cutting, grinding and sawing equipment fitted or in conjunction with suitable dust suppression techniques will be used;

ii. Dust suppression will be employed to avoid the generation of wind-blown dust, and,

iii. Drop-heights into skips will be minimised and the use of enclosed chutes, conveyers and covered skips will be employed where possible;

7.2.1.4 Waste Management

i. The disposal of waste material by burning on site will not be permitted.

7.2.1.5 Trackout

i. Vehicles entering and leaving the site will be clean and covered to prevent escape of materials during transport;

ii. Hard surfacing will be provided to the main haul route at an early stage in the programme and thereafter will be regularly damped down and cleaned. On-site haul routes will be regularly inspected. The haul route will be regularly inspected and repaired as necessary and all inspections/actions will be recorded in a site log book;

iii. Site vehicular access points will be provided with a jet-wash facility to clean-down vehicles, with particular attention wheels, prior to exiting the site in order to prevent mud etc. being tracked out onto Heywood Old Road;

iv. If the wheel wash cannot be located at the point of exit, an area of hard-surfaced road will be provided between the wheel wash facility and the exit; and,

v. A water-assisted dust sweeper will be employed on Heywood Old Road as required, to remove any material tracked out of the site.

7.3 MONITORING STRATEGY

7.3.1 The risk from site-based activities has been assessed as negligible to low risk in accordance with the IAQM's guidance. The IAQM (2018) guidance states that 'for negligible and low risk category sites, it should not normally be necessary to undertake any quantitative air quality monitoring'. A high risk has however been identified associated with the trackout of mud and dust onto Heywood Old Road after exiting the site to the north.

7.3.2 The nominated person will carry out a weekly inspection of the roadside frontages of the properties within 100 m of the site entrance to ensure that there is no evidence of excess dust accumulation e.g. on fences and windowsills. Street furniture such as signposts and bollards will also be inspected. In addition, the site access and section of road beyond will be inspected regularly throughout the day to ensure that the wheel wash is operating effectively and that excess material is not being tracked out onto the public highway.

7.3.3 A site log will be kept to record the inspections and any action taken in response to unacceptable conditions or complaints relating to dust. All records will be made available to RBC when asked.

7.3.4 The nominated person will also undertake regular (at least daily) inspections of operations on the site. They will survey the site for evidence of dust release from

activities such as the movement of vehicles, reprofiling works and stockpiling operations. If unacceptable dust generation is observed, the nominated person will instigate further mitigation as appropriate.

7.3.5 The frequency of inspections will be increased when activities with a high potential to produce dust are being carried out or during prolonged dry/windy conditions. Any exceptional incidents causing dust and/or air emissions and the action taken to resolve the situation will be recorded.

7.3.6 Where visual inspection identifies unacceptable dust deposition or complaints are received, the cause will be identified and control measures will be enhanced in a timely manner, for example using water suppression. If dust levels are uncontrollable, works will be suspended until either sufficient suppression measures can be employed or adverse weather conditions improve.

SECTION 8 CONCLUSIONS

8.1 A construction phase dust risk assessment has been undertaken for the proposed Edgar Wood Academy in Middleton.

8.2 Baseline concentrations of PM_{10} and $PM_{2.5}$ are expected to be low and well below the respective annual mean AQO.

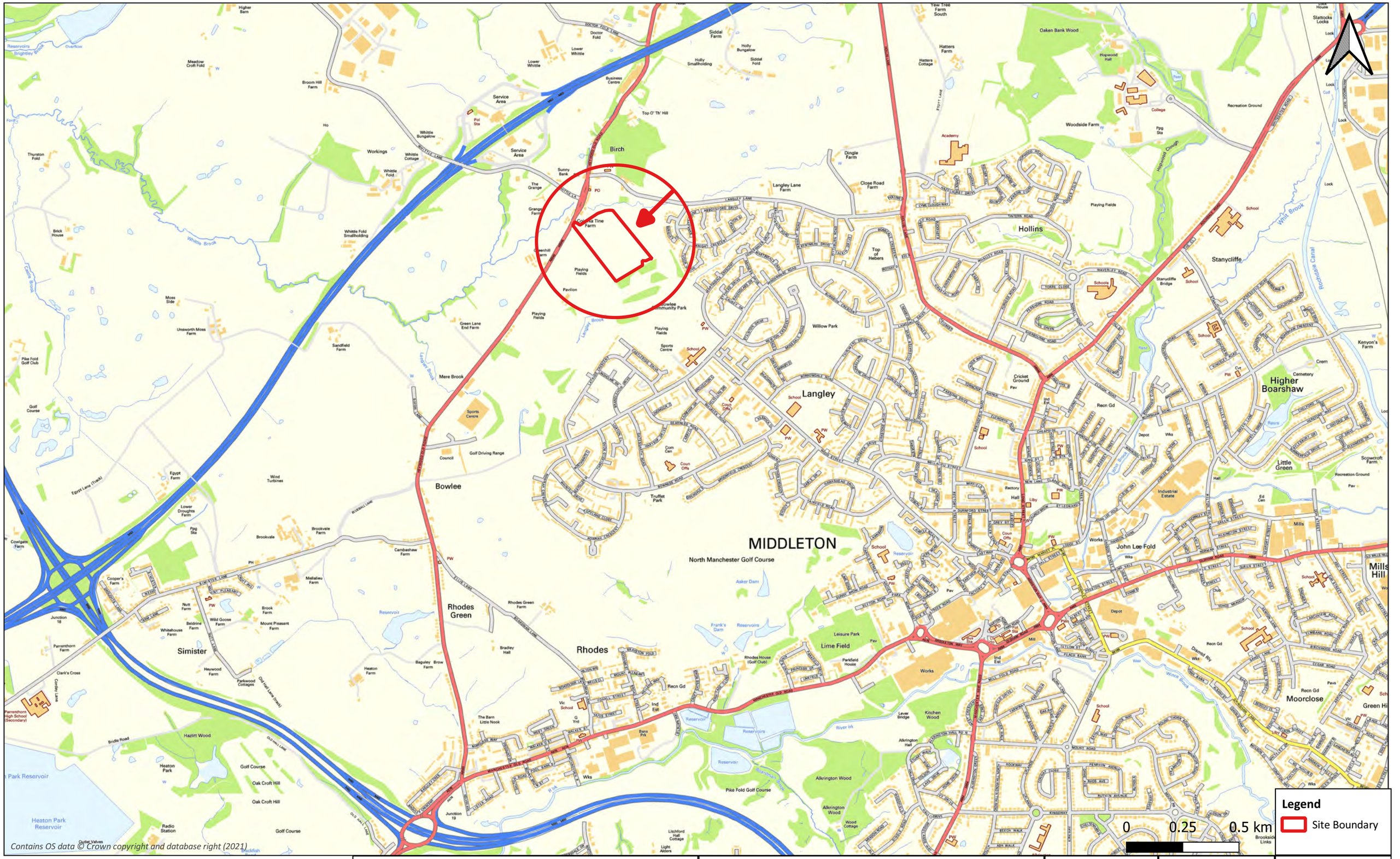
8.3 The proposed development is assessed as presenting a negligible to low risk of dust impacts associated with site works in the absence of mitigation. However, the risk of trackout dust impacts is assessed as high with respect to HDVs exiting the site to the north in the absence of mitigation. The risk to human health is assessed as low due to the low baseline concentrations of PM_{10} and $PM_{2.5}$ in the local area.

8.4 Recommended mitigation measures are outlined in this report. With appropriate mitigation and monitoring in place the overall effect of the construction phase on local air quality is judged to be ‘not significant’.

8.5 Even with a rigorous DMP in place, it is not possible to guarantee that the dust mitigation measures will be effective all the time, and if, for example, dust emissions occur under adverse weather conditions, or there is an interruption to the water supply used for dust suppression, the local community may experience occasional, short-term dust annoyance. The likely scale of this is not expected to be sufficient to change the conclusion that, with mitigation, the effects will be ‘not significant’.

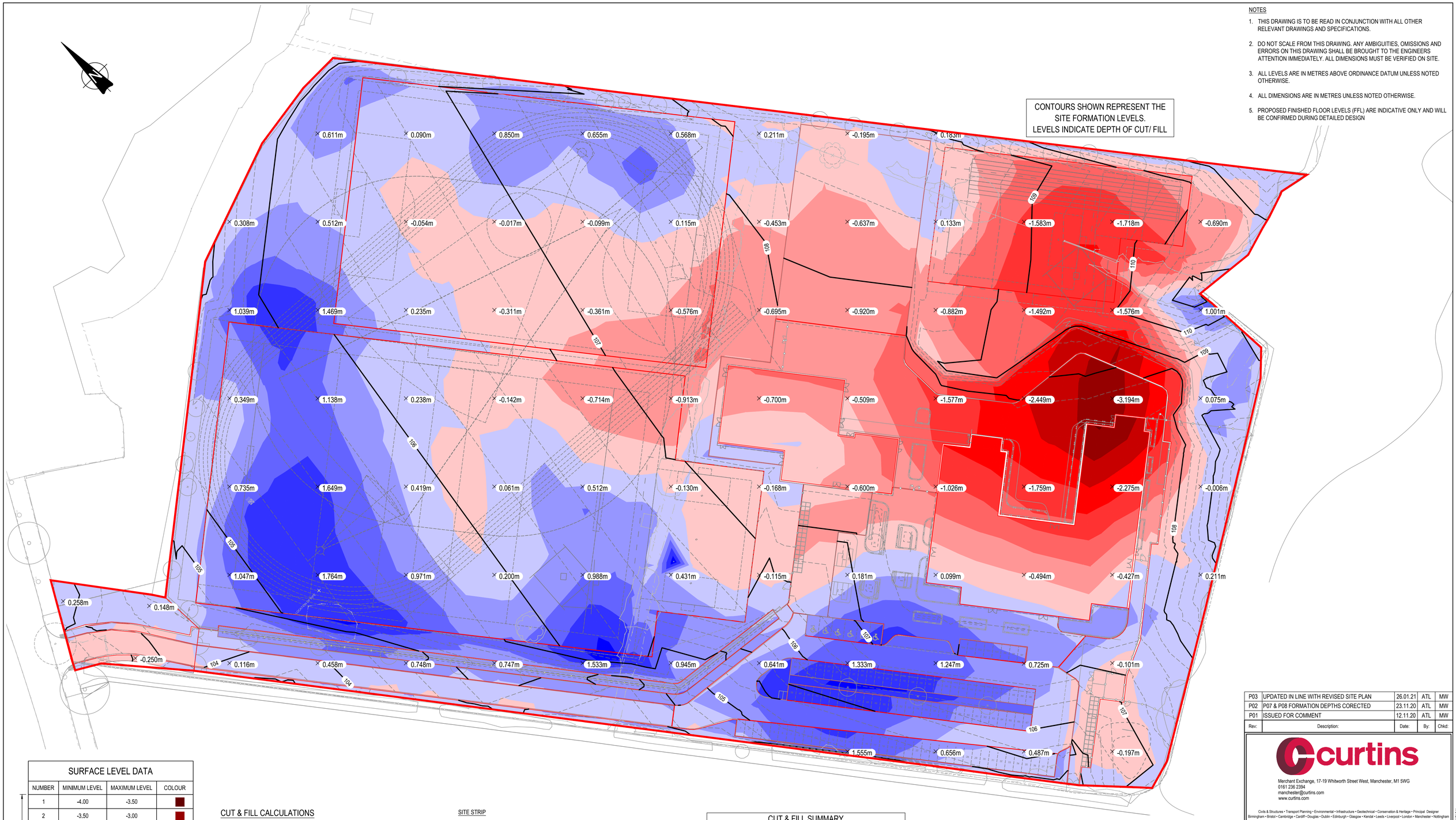
8.6 This document should be included within the overarching CEMP and submitted to RBC for approval prior to commencement on site.

APPENDIX 1 ▪ Drawings



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Client/Project **EDGAR WOOD ACADEMY** **WATES CONSTRUCTION LTD**	Map Title **SITE LOCATION PLAN**	Job no. 22257	Drawing No. 001-001	Revision -
		Scale 1:25000	Date 15/02/2021	Frame dimensions A3
		Drawn ECW	Checked AJ	Approved AJ



NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE FROM THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON THIS DRAWING SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE VERIFIED ON SITE.
3. ALL LEVELS ARE IN METRES ABOVE ORDINANCE DATUM UNLESS NOTED OTHERWISE.
4. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
5. PROPOSED FINISHED FLOOR LEVELS (FFL) ARE INDICATIVE ONLY AND WILL BE CONFIRMED DURING DETAILED DESIGN

SURFACE LEVEL DATA

	NUMBER	MINIMUM LEVEL	MAXIMUM LEVEL	COLOUR
CUT	1	-4.00	-3.50	
	2	-3.50	-3.00	
	3	-3.00	-2.50	
	4	-2.50	-2.00	
	5	-2.00	-1.50	
	6	-1.50	-1.00	
	7	-1.00	-0.50	
	8	-0.50	0.00	
FILL	9	0.00	0.50	
	10	0.50	1.00	
	11	1.00	1.50	
	12	1.50	2.00	
	13	2.00	2.50	
	14	2.50	3.00	

CUT & FILL CALCULATIONS

1. ALL AMBIGUITIES, ERRORS OR OMISSIONS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY.
2. THE ASSUMPTION HAS BEEN MADE THAT ALL MATERIAL BELOW SITE STRIP IS SUITABLE FOR RE-USE.
3. RESULTS BELOW DO NOT ACCOUNT FOR THE FOLLOWING:
   - ARISINGS
   - BULKING FACTORS
   - FOUNDATIONS
   - TEMPORARY STRUCTURES
   - DRAINAGE
4. THE CUT/FILL VOLUMES HAVE BEEN CALCULATED USING A COMPARISON BETWEEN THE FINISHED SITE STRIP LEVELS AND PROPOSED FINISHED LEVEL FORMATIONS.
5. THE TOPO HAS BEEN ASSUMED TO BE REPRESENTATIVE OF THE SITE UPON WORKS COMMENCEMENT OF EARTHWORKS OPERATIONS. CURTINS ACCEPT NO LIABILITY FOR VARIATION FROM THE PROVIDED TOPOGRAPHICAL SURVEY.
6. CONTRACTOR TO PRODUCE A MATERIALS MANAGEMENT PLAN IN ACCORDANCE WITH THE REQUIREMENTS OF THE SITE INVESTIGATION.
7. BULK EARTHWORKS DRAWING IS TO BE USED FOR COST PLAN USE ONLY. FURTHER DEVELOPMENT BY THE BULK EARTHWORKS CONTRACTOR IS REQUIRED.

SITE STRIP

A SITE STRIP DEPTH OF 400mm ACROSS THE SITE (TOPSOIL), BASED ON THE RESULTS OF THE SITE INVESTIGATION BOREHOLES/ TRIAL PIT LOGS.

CUT AND FILL FORMATION DEPTHS:

1. PROPOSED MAIN BUILDING - 850mm (INC 500dp PILING MAT)
2. PROPOSED SPORTS HALL BUILDING - 930mm
3. PAVING TYPE P01 - PERMEABLE PAVEMENT (PEDESTRIAN) - 480mm
4. PAVING TYPE P02 - PERMEABLE TARMAC (PEDESTRIAN) - 350mm
5. PAVING TYPE P03 - PERMEABLE TARMAC (HEAVY VEHICLE) - 450mm
6. PAVING TYPE P04 - PERMEABLE PAVEMENT (OCCASIONAL HEAVY VEHICLE)- 555mm
7. PAVING TYPE P05 - EXTERNAL CONCRETE SLAB (PEDESTRIAN)- 350mm
8. PAVING TYPE P06 - PERMEABLE TARMAC (EMERGENCY VEHICLE) - 320mm
9. PAVING TYPE P07 - IMPERMEABLE TARMAC (PEDESTRIAN) - 160mm
8. PAVING TYPE P08 - IMPERMEABLE TARMAC (HEAVY VEHICLE) - 650mm
9. PAVING TYPE P09 - PERMEABLE MUGA (PEDESTRIAN) - 285mm
10. PROPOSED TURF PITCHES - 350mm
11. GENERAL LANDSCAPING - 200mm

REFER TO DRAWING 077034-CUR-XX-00-DR-C-94701 FOR LOCATIONS OF PAVEMENT BUILD-UPS

CUT & FILL SUMMARY

ITEM	2D AREA	CUT	FILL	BALANCE
SITE STRIP TO BE DISPOSED	52,210m²	20,885 m³	0 m³	20,885 m³ CUT*
SITE STRIP TO FORMATION	51,585 m²	19,115 m³	19,145 m³	30 m³ FILL

*SEE SITE STRIP TABLE FOR DETAILS OF RE-USE/ DISPOSAL OF TOPSOIL

SITE STRIP SUMMARY

ITEM	DEPTH	VOLUME
CONFIRMED DISPOSAL	150mm	3,130 m³
RE-USED IN SPORTS PITCHES	350mm	7,440 m³
RE-USED IN GENERAL LANDSCAPING	200mm	2,950 m³
TOTAL RE-USE VOLUME		10,390 m³
REMAINING VOLUME		7,365 m³
TOTAL VOLUME TO BE REMOVED FROM SITE		10,495 m³

KEY

- SITE BOUNDARY TAKEN FROM DRAWING EWA-ALA-00-XX-DR-L-0007 REV P07
- FORMATION LEVEL MAJOR CONTOUR
- FORMATION LEVEL MINOR CONTOUR
- × 0.350m COMPARISON LEVEL (FORMATION - SITE STRIP)

INFORMATION REQUIRED
PROPOSED DESIGN IS PRELIMINARY ONLY AND SUBJECT TO CHANGE

FOR CONSTRUCTION DETAILS REFER TO DRAWING 077034-CUR-XX-00-DR-C-94701

DRAWING BASED ON:

- LANDSCAPE ARCHITECT'S PLAN EWA-ALA-00-XX-DR-L-0001 REV P07
- TOPOGRAPHICAL SURVEY GM11081-002 Rev A
- UNITED UTILITIES RECORDS
- ROOT PROTECTION AREA GM11081-008-B
- GRP SURVEY GM11081-004-C

Rev:	Description:	Date:	By:	Chkd:
P03	UPDATED IN LINE WITH REVISED SITE PLAN	26.01.21	ATL	MW
P02	P07 & P08 FORMATION DEPTHS CORECTED	23.11.20	ATL	MW
P01	ISSUED FOR COMMENT	12.11.20	ATL	MW

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Status: PRELIMINARY

Project: EDGAR WOOD SCHOOL

Drg Title: PROPOSED EARTHWORKS CUT & FILL ANALYSIS

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	12.11.20	ATL	ATL	MW

Scale: 1:500

Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:
EWA	- CUR -	XX -	00 -	DR -	C -	91601	- P03

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Notes

1. Do not scale from this drawing
2. To be read in conjunction with Project Risk Register REF: XXX
3. To be read in conjunction with all other Landscape Architect"s drawings

KEY

ID	RISK	MITIGATION	Date Mitigated

RESIDUAL PROJECT RISKS

DATE	REV	DESCRIPTION OF REVISION	DRAWN BY	APPROVED BY
15/02/2021	P05	Updated for Planning	AHL	SB
12/02/2021	P04	1. Amended planting/soft area to courtyard 2. Trees relocated to edge of sports pitch 3. Fencing added around habitat area 4. Access road updated to RMBC design 5. Boundary updated to fence line 6. Issued for Final CPs	MH	SB
16/12/2020	P03	Updated for planning	DF	SB

REVISIONS

STATUS

S2 - *FOR PLANNING*

ares LANDSCAPE ARCHITECTS

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CLIENT :

Wates Construction

PROJECT TITLE :

Edgar Wood Academy

DRAWING TITLE :

Site Context Masterplan

DRAWING SCALE :	DRAWN BY :	DRAWN DATE :
1:1250	SH	20/11/2020
PAPER SIZE :	APPROVED BY :	ALA PROJECT CODE:
A1	SB	ALA633

DRAWING NUMBER :	STATUS :	REVISION :
EWA-ALA-00-XX-DR-L-0002	**S2**	**P05**

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