

Intended for
Quattro Ltd

Date
June 2020

Project Number
1620009167_AQA

WASTE RECYCLING FACILITY AND CONCRETE BATCHING PLANT, SOUTHALL LANE, HAYES

AIR QUALITY ASSESSMENT

WASTE RECYCLING FACILITY AND CONCRETE BATCHING PLANT, SOUTHALL LANE, HAYES AIR QUALITY ASSESSMENT

Project No. **1620009167_AQA**
Issue No. **03**
Date **29/06/2020**
Made by **Lesley Vining**
Checked by **Graham Harker**
Approved by **Graham Harker**

Made by:

Checked/Approved by:

This report has been prepared by Ramboll Environment and Health UK Limited with all reasonable skill, care and diligence, and taking account of the Services and the Terms agreed between Ramboll Environment and Health UK Limited and the Client. This report is confidential to the Client, and Ramboll Environment and Health UK Limited accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known, unless formally agreed by Ramboll Environment and Health UK Limited beforehand. Any such party relies upon the report at their own risk. Ramboll Environment and Health UK Limited disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the Services.

Version Control Log

Revision	Date	Made by	Checked by	Approved by	Description
01	02/06/2020	LV	GH	GH	First Draft
02	23/06/20	LV	GH	GH	Final Draft
03	29/06/20	LV	GH	GH	Final

Ramboll
03
Aston Court
Pynes Hill
Exeter
Devon
EX2 5AZ
United Kingdom
T +44 1392 440 600
www.ramboll.co.uk

CONTENTS

1.	INTRODUCTION	1
1.1	Overview and Background	1
1.2	Scope of Assessment	2
2.	LEGISLATION AND POLICY UPDATE	3
2.1	Legislation, Policy and Guidance remaining Valid	3
2.2	Updated Legislation, Policy and Guidance	3
2.3	New Legislation, Policy and Guidance	3
3.	EXISTING AIR QUALITY	6
3.1	Automatic Monitoring	6
3.2	Non-Automatic Monitoring	7
3.3	Air Quality in the vicinity of the Application Site	7
4.	SITE	9
4.1	Facility Location	9
5.	PROPOSED DEVELOPMENT	11
5.1	General	11
5.2	Process	11
5.3	Proposed Amendments	11
5.4	Construction and Demolition Waste Recycling Facility	13
5.5	Concrete Batching Plant	13
5.6	Storage	13
5.7	Parking	13
5.8	Proposed Development Operating Capacity	14
5.9	Operating Hours	14
5.10	Vehicle Movements	15
6.	DUST MITIGATION	16
6.1	Introduction	16
6.2	Environmental Permitting Regulations	16
6.3	Facility Design and Operational Controls	16
6.4	Dust Management Plan	19
7.	CONCLUSIONS	21

LIST OF TABLES

Table 3.1: Monitoring in Proximity to Proposed Development	6
Table 3.2: Recorded NO ₂ Data at Automatic Monitoring Locations	6
Table 3.3: Recorded PM ₁₀ Data at Automatic Monitoring Locations	6
Table 3.4: Nitrogen Dioxide Diffusion Tube Monitoring	7
Table 5.1: Vehicle Movements	15

LIST OF FIGURES

Figure 3.1: Air Quality Monitoring Locations 8
Figure 4.1: Application Site Location 9
Figure 4.2: Site Surrounds10

APPENDICES

Appendix 1
Waste Recycling Facility and Concrete Batching Plant, Southall Lane, Hayes, Air
Quality Assessment UK11-23192
Waste Recycling Facility and Concrete Batching Plant, Southall Lane, Hayes,
Addendum Air Quality Assessment UK11-23192

Appendix 2
Site Plans

1. INTRODUCTION

1.1 Overview and Background

Ramboll UK Limited (Ramboll) was originally commissioned by Quattro UK Ltd ('the Applicant') to undertake an Air Quality Assessment in respect of the proposed development of land located on Southall Lane, Hounslow, UB2 5XJ ('the application site') in 2016/2017. The assessment was required in connection with the proposed redevelopment of the application site, to comprise a construction and demolition (C&D) waste recycling facility; a concrete batching plant (CBP); and associated parking, ancillary structures and facilities. Planning permission for the proposed development was granted in January 2018.

During the course of the original application being considered the area available for development within the red-line boundary was altered due to a 14m wide strip of land along the western boundary needing to be retained by London Borough of Hounslow (LBH). Appropriate amendments to the layout were made to the scheme with that strip of land left clear under the plans approved by the January 2018 permission.

In addition to the loss of the 14m strip on the western boundary during consideration of the original scheme, a further 3 m strip of land along the full extent of the western boundary was found to also not be available at detailed design stage post permission being granted. This land has now additionally been omitted from the red-line boundary together with reconfiguration of red-line at south-western corner. As a result, the site area within the red-line boundary has reduced from the original application area of 16,695 m² to a new site area of 15,320 m².

Not affecting the red-line boundary, but affecting the developable site area, at build out stage a 10m wide strip of land on the north eastern boundary (boundary with Southall Lane) was retained as an existing vegetated/treed area principally for screening purposes.

As a result of these boundary and developable area changes some alterations were made during the construction phase to the site layout and structures.

The amendments to the site layout and structures from that approved, and now subject to this retrospective application, have been largely driven by alterations being made at a late stage to the boundary line (3m lost along western boundary) and the decision to pull the built structures away from the vegetated/treed area on the eastern boundary to retain natural screening (10m lost on eastern boundary) which had knock on impacts on the layout of the site. Alterations at build out stage were also compounded by the pace at which the site had to be built out given that it was a proposal to facilitate relocation from an existing Quattro facility which the applicant was forced to vacate due to HS2 compulsory purchase.

Following discussions with LBH Enforcement Officers – the built scheme has been further reviewed and additional works have been carried out to further enclose/clad elements of the waste recycling operations and associated storage bays and provide amended pedestrian access/walking routes. These additional works are in the process of being completed at the date of submission of this application given delays incurred with COVID-19 restrictions. The application has been assessed on the basis that all works detailed on the proposed plans have been fully built out.

It was the view of the applicant that the changes to the site layout and approved structures could have been dealt with by means of a S73 application coupled with a separate application for the small number of new structures erected. However, via discussion with the enforcement officer it was agreed that a full new retrospective application would be made for retention of the scheme as now built out.

The Applicant is seeking planning permission for temporary use of the application site up until 21st December 2027.

1.2 Scope of Assessment

As indicated above, a detailed air quality assessment¹ was submitted as part of the original planning application which considered potential impacts arising during the construction phase and during operation of the proposed development both as a result of on-site activities and from traffic generation. A further addendum report² was submitted in March 2017, to respond to concerns from neighbouring properties particularly with regard to dust impacts. These reports are provided in Appendix 1.

The majority of the proposed development has now been constructed and therefore the need to assess impacts during the construction phase has not been identified.

The changes to the proposed development would not significantly increase operational traffic generation and the level of car and heavy duty vehicle (HDV) parking has been reduced, therefore this element of the assessment has not been reassessed. Further information on this element is provided in Section 5.

The scope of the assessment has therefore been limited to the following:

- Update of the legislation and policy framework to identify if there have been any significant changes in legislation and policy since the original submission;
- Update of the baseline assessment to provide update of existing air quality; and
- Provision of information on the dust mitigation measures.

¹ Ramboll Environ, December 2016, Waste Recycling Facility and Concrete Batching Plant, Southall Lane, Hayes, Air Quality Assessment UK11-23192

² Ramboll Environ, March 2017, Waste Recycling Facility and Concrete Batching Plant, Southall Lane, Hayes, Addendum Air Quality Assessment UK11-23192

2. LEGISLATION AND POLICY UPDATE

2.1 Legislation, Policy and Guidance remaining Valid

The following legislation, policy and guidance remains of relevance:

- EU Directive 2008/50/EC³ on ambient air quality and cleaner air for Europe
- Part IV of the Environment Act 1995 (as amended)⁴ and
- Air Quality (England) Regulations 2000⁵ and the Air Quality (Amendment) (England) Regulations 2002⁶;
- Environmental Protection Act (1990)⁷ provides legislation for the control of dust;
- The London Plan (2016)⁸
- London Borough of Hounslow Local Plan 2015 - 2030⁹;
- Hounslow Air Quality Supplementary Planning Document 2008¹⁰
- Sustainable Design and Construction SPG¹¹ ;
- Control of Dust and Emissions During Construction and Demolition SPG¹² ;

2.2 Updated Legislation, Policy and Guidance

2.2.1 The Nation Planning Policy Framework (NPPF)¹³

The NPPF has been updated since the original assessment, the updated guidance places greater emphasis on ensuring that all new development is sustainable and to also ensuring that new development can be integrated effectively with existing businesses and facilities.

2.2.2 Air Quality Planning Practice Guidance (AQPPG)¹⁴

The AQPPG was updated in 2019, the update does not introduce new guidance that is significant to the application.

2.3 New Legislation, Policy and Guidance

2.3.1 Clean Air Strategy

Defra published a new Clean Air Strategy 2019¹⁵ in January 2019, setting out how the UK will significantly reduce harmful air pollutant emissions by 2020 and 2030. The Clean Air Strategy

³ Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe

⁴ Secretary of State, 1995. The Environment Act 1995 part IV Air Quality, HMSO

⁵ Secretary of State, The Air Quality (England) Regulations 2000 (SI 2000 No. 928), HMSO

⁶ Secretary of State, The Air Quality (England) (Amendment) Regulations 2002 (SI 2002 No. 3043), HMSO

⁷ Secretary of State, The Environment Act 1990 HMSO

⁸ Greater London Authority, 2016. London Plan – The Spatial Development Strategy for London Consolidated with Alterations since 2011. London. GLA

⁹ London Borough of Hounslow, 2015. Local Plan 2015-2030

¹⁰ London Borough of Hounslow, 2008. Air Quality Supplementary Planning Document to the Hounslow Local Development Framework

¹¹ Greater London Authority, 2014. Sustainable Design and Construction Supplementary Planning Guidance. GLA. London. Available: https://www.london.gov.uk/sites/default/files/gla_migrate_files_destination/Sustainable%20Design%20%26%20Construction%20SPG.pdf

¹² Greater London Authority, 2014. The Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance. London.

¹³ Ministry of Housing, Communities and Local Government, 2019. National Planning Policy Framework. HMSO.

¹⁴ <https://www.gov.uk/government/collections/planning-practice-guidance>.

¹⁵ Defra, 2019. Clean Air Strategy

contains an intention of working towards the World Health Organisation guideline value for PM_{2.5} of 10 µg/m³. The timetable for this has not been set.

2.3.2 Draft New London Plan: Mayor's Intend to Publish version (2019)¹⁶ ;

The London Plan: The Spatial Development Strategy for Greater London (Draft London Plan) was published for public consultation in December 2017 and sets out the Mayor of London's overall strategic plan for London (Greater London Authority, 2017). The Draft London Plan runs from 2019 to 2041 in order to provide a longer-term view of London's development to inform decision making.

Policy Creating a healthy City states:

"To improve Londoners' health and reduce health inequalities, those involved in planning and development must:

... DB seek to improve London's air quality, reduce public exposure to poor air quality and minimise inequalities in levels of exposure to air pollution..."

The draft Plan includes within the Sustainable Infrastructure chapter Policy (SI1) Improving Air Quality which aim is confirmed at para 9.1.3:

"to ensure that new developments are designed and built, as far as is possible, to improve local air quality and reduce the extent to which the public are exposed to poor air quality. This means that new developments, as a minimum, must not cause new exceedances of legal air quality standards, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits".

Policy SI1 Improving Air Quality states:

"A Development Plans, through relevant strategic, site-specific and area-based policies, should seek opportunities to identify and deliver further improvements to air quality and should not reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality.

B To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed:

1) Development proposals should not:

a) lead to further deterioration of existing poor air quality

b) create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits

2.3.3 c) create unacceptable risk of high levels of exposure to poor air quality. London Environmental Strategy¹⁷

The London Environmental Strategy, published in May 2018, evaluates the current condition of London's environment at a city-wide level (Mayor of London, 2018). This is the first strategy to bring together approaches to every aspect of London's environment, integrating the following areas:

- air quality;
- green infrastructure;
- climate change mitigation and energy;

¹⁶ Greater London Authority, 2019. Draft New London Plan (Mayor's Intending to Publish version). London

¹⁷ Greater London Authority, 2017. London Environment Strategy Draft for Public Consultation. London. GLA

- waste;
- adapting to climate change;
- ambient noise; and
- low carbon circular economy.

The Strategy aims, among other objectives:

"for London to have the best air quality of any major world city by 2050, going beyond the legal requirements to protect human health and minimise inequalities".

Chapter 4 on Air Quality includes a series of objectives, policies and proposals to improve air quality. Several key issues have been highlighted to be addressed in the strategy:

- Achieving legal compliance as quickly as possible;
- Diesel vehicles, especially cars and vans;
- Tackling all sources of pollution;
- Government action;
- Maximising co-benefits between air quality and climate change policies; and
- Further reductions are needed in PM₁₀ and PM_{2.5}, particularly from transboundary pollution, tyre and brake wear, and wood burning.

3. EXISTING AIR QUALITY

3.1 Automatic Monitoring

LBH operates seven automatic monitoring sites within the borough. One of these sites is located at Cranford, approximately 1.4 km south-west of the application site. The London Borough of Hillingdon also operate a roadside automatic monitoring site adjacent to North Hayes Road, approximately 0.7 km to the north-west.

Details of the monitoring sites are provided in Table 3.1. NO₂ and PM₁₀ concentrations recorded since 2013 are provided in Tables 3.2 and Table 3.3. The locations are shown in Figure 3.1.

Table 3.1: Monitoring in Proximity to Proposed Development

Site	Distance to Kerb	Classification	OS Grid	Distance from Proposed Development
HS2 Cranford	70 m	Background	510370, 177195	1.4 km
HIL5 Hillingdon Hayes	1 m	Roadside	510303, 178882	0.7 km

Table 3.2: Recorded NO₂ Data at Automatic Monitoring Locations

Site	Objective	Monitoring Year						
		2013	2014	2015	2016	2017	2018	2019
HS2	Annual Mean µg/m ³	30.1	31.4	30.2	30.8	30.0	26.0	26.9
	No. Exceedences of 1-hour Objective	0 (113)	0	0	2	10	0(0)	0
HIL5	Annual Mean µg/m ³	47.0	52.9	46.2	45.9	47	43	41
	No. Exceedences of 1-hour Objective	4	2	2	1	12	0	0
* Where data capture was less than 90% the 99.8th percentile of 1-hour means is provided in brackets								

Monitoring of NO₂ shows consistent exceedances of the annual mean objective at the roadside along North Hayes Road between 2013 and 2019, although there has been a reduction in concentrations in recent years.

The data for site HS2 indicates annual mean concentrations to be below the objective limit at background locations. The data shows a general decrease in concentrations at background locations since 2013.

There has been no exceedance of the short term hourly NO₂ objective, at either site.

Table 3.3: Recorded PM₁₀ Data at Automatic Monitoring Locations

Site	Objective	Monitoring Year						
		2013	2014	2015	2016	2017	2018	2019
HS2	Annual Mean µg/m ³	19.0	18.1	17.0	17.5	18.0	15.0	16.7
	No. Exceedences of 24-hour Objective	1 (19)	5	4	8	5	0(23)	7
HIL5	Annual Mean µg/m ³	29.4	34.5	28.0	28	27	30	28

Site	Objective	Monitoring Year						
		2013	2014	2015	2016	2017	2018	2019
	No. Exceedences of 24-hour Objective	17 (46)	45 (60)	14	32	26	22	25
* Where data capture was less than 85% the 90.4th percentile of 24-hour means is provided in brackets								

Monitoring of PM₁₀ shows concentrations at less than 75% of the annual mean objective at both roadside and background locations in the vicinity of the application site.

The 24-hour objective allows for up to 35 exceedences of the 50 µg/m³ objective in any given year. On this basis the objective has been met at the HS2 background site since 2010 however the objective was exceeded at the HIL5 roadside site in 2014, although short-term concentrations have declined to below the objective in more recent years.

3.2 Non-Automatic Monitoring

NO₂ is measured using diffusion tubes extensively throughout the borough. The closest to the application site is located adjacent to Southall Road. There is also one diffusion tube of relevance operated by the London Borough of Hillingdon. A summary of the results from those of relevance to this assessment are set out in Table 3.4. The location of each monitoring site is shown in Figure 3.1.

The data presented in Table 3.4 indicates an overall decline in concentrations from 2016 onwards, with all monitoring locations, apart from HS86, reporting concentrations below the annual mean objective in 2018. Bath Road and The Parkway experience very high traffic volumes which are likely to be contributing to elevated NO₂ concentrations.

It is not possible to monitor short-term NO₂ concentrations using diffusion tubes; however, research has concluded that exceedences of the 1-hour mean objective are generally unlikely to occur where annual mean concentrations are below 60 µg/m³. Based on the monitoring data presented in Table 3.4 it is unlikely that the 1-hour objective is being exceeded at any of the monitoring locations.

Table 3.4: Nitrogen Dioxide Diffusion Tube Monitoring

Site ID	Location	Site Type	2013	2014	2015	2016	2017	2018
HS54	Southall Lane	Roadside	42.8	48.6	48.4	45.9	40.9	35.0
HS55	Bath Road	Roadside	45.1	49.6	44.5	50.7	43.8	33.7
HS86	Bath Road/The Parkway	Roadside	49.5	54.2	50.8	54.7	53.5	41.3
CRAN	Cranford background adjacent to M4	Background	28.1	29.7	26.8	28.4	28.1	24.3
HD56	Phelps Way	Roadside	35.5	35.4	31.4	32.1	33.4	

3.3 Air Quality in the vicinity of the Application Site

The monitoring data has indicated that whilst air quality is steadily improving within the locale of the application site some exceedance of the NO₂ annual mean may still arise close to the major roads.

Further away from the main road network, such as the location of the application site, concentrations would be expected to be lower and to meet the annual NO₂ objective.

At all locations, air quality is predicted to meet the short term NO₂ objective and both the annual and daily mean PM₁₀ objectives.

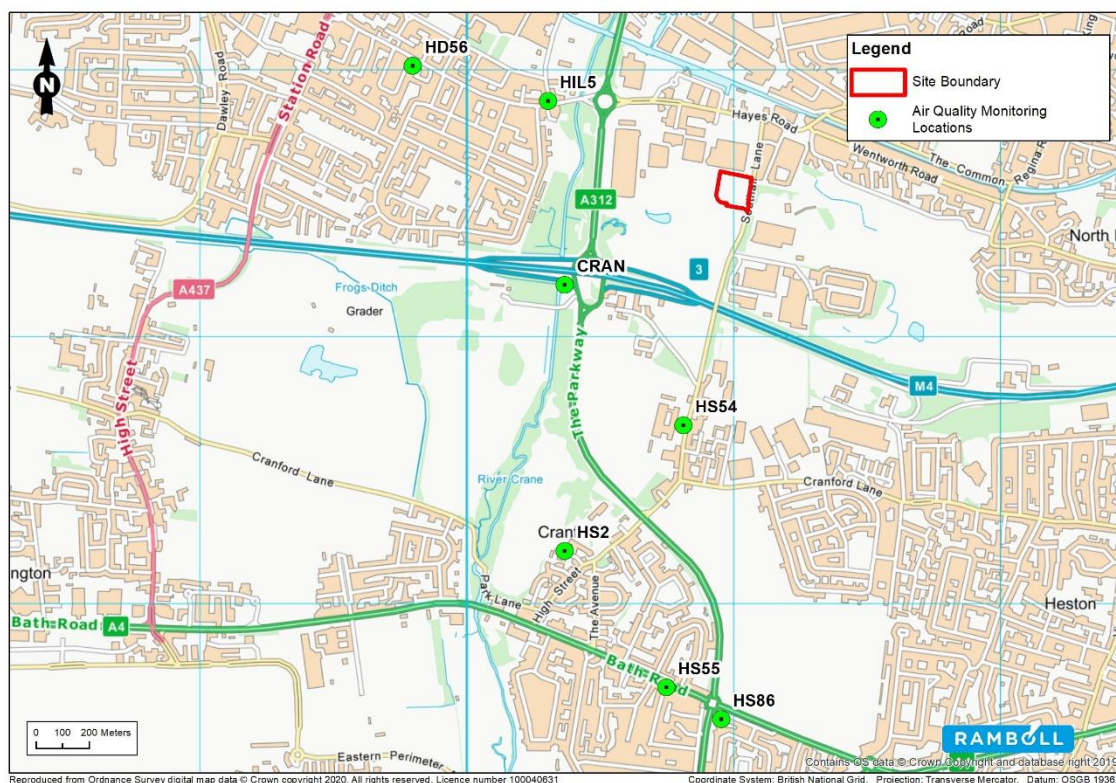


Figure 3.1: Air Quality Monitoring Locations

4. SITE

4.1 Facility Location

The facility is located to the west of Southall Lane and previously formed part of the southern extent of the Western International Market. The location of the application site is shown in Figure 4.1.

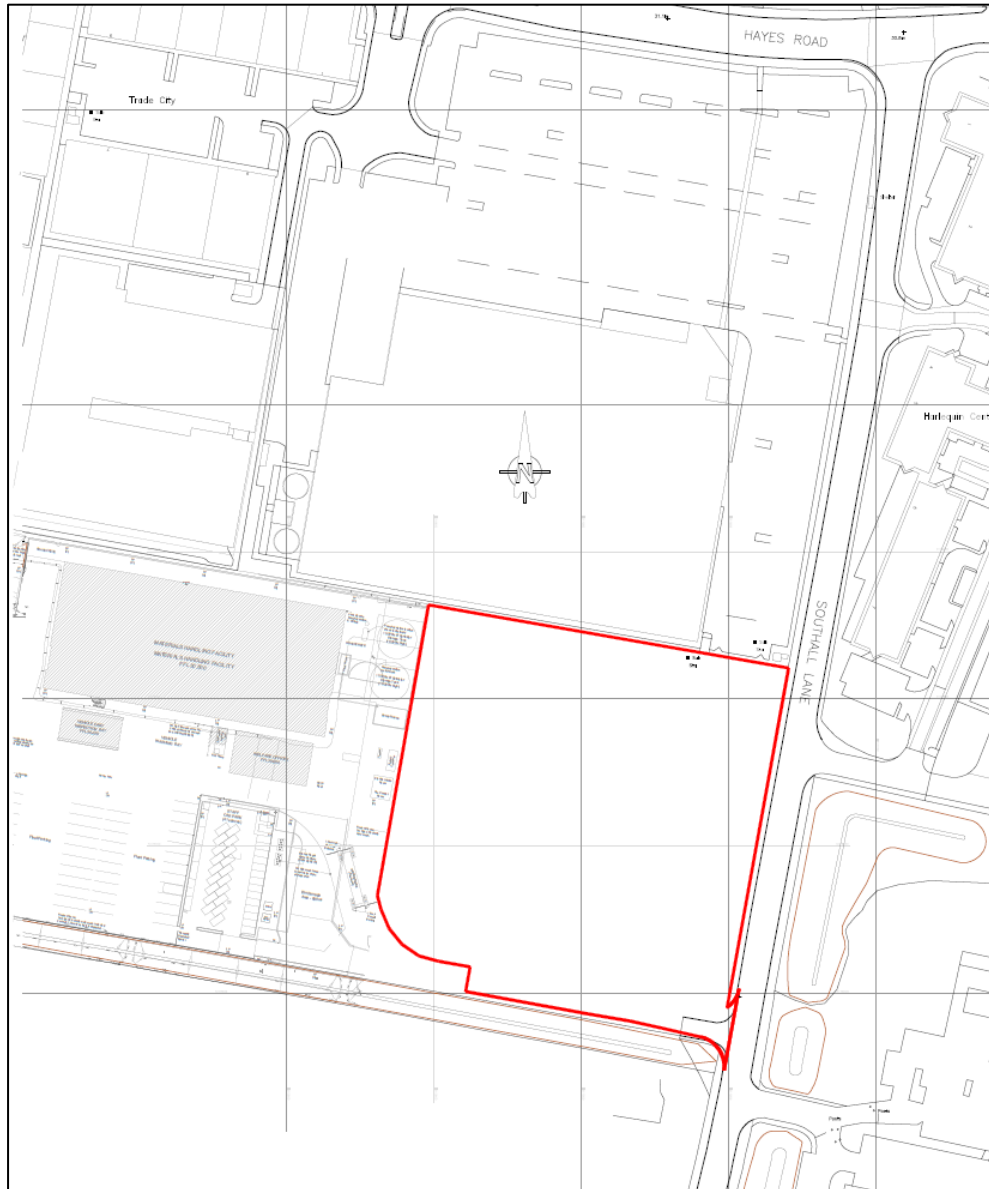


Figure 4.1: Application Site Location

Access to the development is from Southall Lane with the access point located on the southern boundary of the site. The site access is shared with the adjacent Household Waste Depot (HWD).



Figure 4.2: Site Surrounds

The site is bound to the:

- north by Costco Wholesale with associated car parking facilities, beyond which lies Hayes Road;
- east by Southall Lane, beyond which lies Airlinks Gold Club and the David Lloyd Sports Centre;
- south by open space which comprises grassland and scrub with a pond, beyond which lies the M4; and
- west by the recently constructed Hounslow Household Waste Facility, comprising a materials handling facility, an office building and vehicle workshop.

The land-uses in the immediate vicinity of the application site comprise a mix of commercial and industrial facilities. In the wider area there is a mix of uses including commercial, industrial, residential, educational and open (recreational) space. The nearest residential receptors are located approximately 250 m to the north-east on Convent Way.

Medium sensitivity receptors in close proximity to the proposed development include two businesses:

- Costco Wholesale Warehouse (Costco) - located immediately north of the proposed development. The Costco site comprises the main warehouse building with car parking to the north and east. A small area of car parking would be located immediately adjacent to the Quattro site. The main customer entrance to the warehouse is on the north eastern corner and deliveries are received within the service yard located in the north west of the building. As such these entrances would be over 100m from the boundary with Quattro.
- Virtus Datacentre - located approximately 80m north west of the proposed development and comprises a large building housing a datacentre with a number of data halls and ancillary equipment, including back-up generators, air conditioning plant and office accommodation.

5. PROPOSED DEVELOPMENT

5.1 General

The revised site layout is provided in Appendix 2. The key principles in terms of the layout as established by the 2018 permission remain the same. The site is broadly split in thirds north to south as follows:

- The northern third of the site accommodates an 8m easement along the full extent of the northern boundary for a foul sewer. The main plant/operational structures run east to west immediately south of this easement.
- The central third of the site comprises open manoeuvring space for HGVs, mixers and frontend loaders serving the concrete batching plant and recycling facility and associated storage.
- The southern third of the site accommodates all the ancillary facilities including: HGV and car parking, cycle storage, weighbridge, weighbridge office, welfare and office facility.

5.2 Process

The proposed development will comprise a C&D waste recycling facility, CBP, weighbridge, office, welfare facilities, storage bays and associated staff and HDV parking.

The onsite processes include the following:

- Delivery & Storage of waste;
- Weighing of delivered waste;
- Loading and Unloading of waste from transport;
- Waste Recycling Plant (WRP) comprising of:
 - Initial screening,
 - Trommel,
 - Enclosed Picking Station.
- Storage of:
 - Accepted waste,
 - Rejected waste,
 - Sorted waste.
- Concrete batching plant including:
 - Delivery and storage of aggregate
 - Loading of aggregate into CBP hoppers
 - Delivery and storage of cement
 - Loading of mixer trucks

5.3 Proposed Amendments

The amendments to the approved site layout/structures for which this application is seeking permission are as follows:

- All structures running along northern boundary (building for out-going waste, recycling plant (picking station), building for in-coming waste and concrete batching plant (CBP)) pulled away from eastern boundary (boundary with Southall Lane) to retain existing vegetated/treed area. Resulting in:
 - End-of line building relocated 10m to the west, and recycling plant (picking station) and end of line building reduced in length from 47m to 28m; height of picking station

- unchanged at 6.3m; height of end of line building increased from 6.4m to 7m at eaves and 7.4m at ridge.
- End of Line building extended along eastern boundary by addition of enclosed recycled material stock bays. Length 25m, height 7m at eastern boundary (rear), 7.4m on western elevation (front), and replacing 12m long 3.5m high sleeper/steel wall previously proposed in this location;
 - Building for incoming waste relocated 9m to the west and re-orientated so entrance faces east (rather than south). Dimensions reduced from: Length along entrance (south) façade 34m x Width 30m to Length along entrance (east) façade 31m by Width 30m; Height to ridge and eaves remain the same at 10.8m and 9m respectively;
 - CBP relocated 11m to west, with minor alterations to footprint and addition of 1 cement silo; max height remains the same at 14.95m;
 - Aggregate storage bays relocated from western boundary due to insufficient space (due to reduction in width of site) to south of CBP running east-west; Length increased from 26m to 33m, height to max point (front) increased from 5.4m to 7m; Additional aggregate storage bays provided immediately adjacent to southern façade of incoming waste building – Length 24m, height at max point 7m.
- New 5m high concrete wall with 2m metal sheeting above with cranked canopy and automated sprinkler system proposed to additionally enclose operational area on eastern boundary; 5m high concrete wall and automated sprinkler system to extend centrally into the site from the eastern boundary to separate operational activity and the weighbridge/parking area to south.
 - Remainder of site boundary treatment, sleeper and steel wall to eastern and northern boundary remains unchanged.
 - Weighbridge office relocated from centre of weighbridge to east of weighbridge and raised up on stilts. Weighbridge office dimensions amended from height 3.8m, length 12m, width 4.5m - amended to height 7.3m (comprised of 3.9m stilts and 3.4m high cabin above), length 12m, width 8m.
 - New separate internal barrier controlled in/out for HGVs accessing the CBP provided west of weighbridge.
 - Welfare/Office building increased in length from 11.2m to 18.3m and width from 7.2 -to 9.3m. Height remains unchanged at 7.3m.
 - New low-level site security offices provided to southern boundary between welfare office building and internal site access (height 3.8m, length 8m, width 5m);
 - Amendments to car and HGV parking layout, including reduction of car parking spaces from 37 to 26 and reduction in HGV parking spaces from 36 to 25.
 - Cycle storage location and provision of 20 cycles and 1 adapted cycle space remains unchanged.
 - Amendments to pedestrian walking routes and provision of new pedestrian access point to south-eastern corner of site.
 - Amendments to drainage scheme to reflect reconfigured site layout.
 - Substation (previously approved under separate application ref: 01032/E/P46 dated 10 May 2018) relocated 3m northward on eastern boundary (footprint and height remain the same as previously approved).
 - New switch room located centrally on eastern boundary adjacent substation.

5.4 Construction and Demolition Waste Recycling Facility

The C&D Waste Recycling Facility would be located in the northern and north-eastern extents of the application site and would comprise:

- A waste picking station 6.5 – 7.4m high; and
- Centralised incoming waste building for the stockpiling of incoming waste.

The plant would include a screen and conveyor, large picking station, trommel screen, small picking station, debris catcher and small picking cabin. The elevations of these elements are shown in Figure 3.2. The whole of the operation would now be enclosed

D&C waste arriving at the facility would be picked up from construction sites within the surrounding area by the Applicants fleet of vehicles or dropped off by customers directly. The waste would be segregated in the first instance into different waste streams i.e. timber, plastics etc. The individual waste streams would be loaded onto a conveyor belt and sorted in a picking station through a combination of both automated and manual processes. The resulting waste would then be crushed and washed, producing high grade aggregate for use in the adjacent CBP or recycled sand and various grades of shingles to be distributed by the Applicant.

5.5 Concrete Batching Plant

The CBP would be located in the northern and north-western parts of the application site and would comprise:

- Three cement silos up to 15m high;
- Mixing and production plant up to 15m high;
- Batch cabin up to 4m high; and
- Feed hoppers and covered conveyor belts.

5.6 Storage

All material stock bays would be covered and are located in three locations;

- in the centre of the site adjacent to the incoming waste building;
- on the western portion of the site south of the CBP; and
- along the north-eastern boundary of the application site adjacent to the WRP.

The first two areas are to store aggregate materials, with the third area for recycled material. All of the bays are fitted with automatic sprinkler systems at the edge of the canopy to assist with dust mitigation.

5.7 Parking

On-site car and lorry-parking has been reduced and is kept separate from the processing areas of the site through the use of buildings or walls. Parking would comprise:

- 26 staff car parking spaces within the south western quartile of the site, reduced from 37 spaces;
- 20 covered cycle parking spaces along the south-western boundary; and
- 25 HDV parking spaces south of the main plant area, reduced from 36.

The HDV fleet will play a major role in the supply and removal of material to and from the operational site. The majority of movements leaving the application site in the morning would be of vehicles filled with residual waste to be delivered to landfill or of vehicles filled with recovered waste to supply sub-base contracts. Where possible the fleet of HDV's will be managed to return

to Site in the evenings fully loaded with aggregate to feed the CBP, thus minimising the HDV movements to and from the application site.

The proposals allow for the overnight parking of the Quattro fleet HDVs. The original application assumed that up to 50 HDVs would be parked overnight on the site, but this has now been reduced to 35. The vehicle fleet would be managed in such a way as to reduce the movement of HDVs as far as is practicable.

5.8 Proposed Development Operating Capacity

5.8.1 Construction and Demolition Waste Recycling Facility

C&D waste brought to the Application Site would primarily come from the A4/M4 corridor and Heathrow and would be imported by a variety of HDV ranging from 7.5 tonners to 16 tonne grab lorries.

When fully operational it is envisaged that a total of 150,000 tonnes of C&D waste would be imported per year, equating to 2,885 tonnes per week. Approximately 15,000 tonnes of the recycled material produced would be high grade recycled material which would be fed directly into the CBP. The remainder of the material would be distributed to service local contracts and customers. This material would be loaded directly from the stock bays by front end loaders onto lorries and transported to the respective delivery sites.

5.8.2 Concrete Batching Plant

The CBP became operational in July 2018. In the 12 months to March 2020 the plant produced 65,000 m³ of concrete. In the original application submission it had been expected that the plant, in reflection of anticipated demand in the area, would produce in the region of 50,000 m³ of concrete per year. Quattro expect that 65,000 m³ will be the maximum output of the plant over a year going forward. Indeed, should they gain planning permission for their new facility at Acton Goods Yard (application currently having been given a recommendation for approval at planning committee) Quattro would expect to see a fall in output from the Southall plant of some 25%.

The WRP facility would supply 15% of the aggregate required by the CBP plant in the form of recycled material. The remaining aggregate and cement requirement will be imported to the proposed development by HDV.

5.9 Operating Hours

In terms of processing waste the facility would operate between 7am – 7pm Monday to Friday and 7am – 5 pm on Saturday and Sunday. However, the facility would need to be able to receive material 24 hours a day, 7 days a week to be able to run responsively to customer requirements.

It is proposed to operate the CBP 24 hours a day, 7 days a week to be able to service anticipated market requirements and enable flexibility to service a full range of contracts; however, whilst the ability to operate 24 hours is important, it is envisaged that for at least 75% of the time the CBP would operate during normal working hours, as set out above. The requirement to operate 24 hours would only apply to the batching plant itself (i.e. the mixing and production of concrete and filling of mixer trucks). A 24 hour operation is not required for supplying aggregate to the plant as the plant would have sufficient integral capacity to be stocked-up during the working day and would have sufficient stored material to operate through the night as and when required.

It is relevant that the current extant planning permission ref: 01032/E/P44 did not impose operating hour restrictions on the approved development.

5.10 Vehicle Movements

The Applicant's transport consultant i-Transport has carried out an updated survey of trip movements associated with the site for comparison with that predicted for the 2016 planning application. A summary of the information is provided in Table 5.1.

Table 5.1: Vehicle Movements

Vehicle Type		Daily (two-way) Traffic 24hr		
		2016 Estimates	2020 Counts	Difference
Staff/ Non-HGV Traffic		148	81	-67
HGV Traffic	Construction and demolition	156	261	+33
	Concrete batching plant	72		
Total		376	342	-34

This indicates that car movements have reduced compared with that predicted in 2016, whilst HGV movements have increased slightly. However, it should be noted that the traffic survey was carried out on a day with higher than average output, whilst the 2016 predicted traffic numbers were estimates of the average traffic flows across the year.

The increase in HGV movements is slightly above the 25 HGV vehicle screening criteria given in the EPUK/IAQM guidance of when traffic impacts can be considered to be negligible. However, if flows were averaged over the year to take into account more typical throughput and periods of lower activity at weekends it is considered that the increase in vehicles would be unlikely to exceed 25 HGV vehicles when recorded as annual average daily traffic flows. Furthermore, this increase would only arise on the site access road and Southall Lane, where there are limited receptors, whilst the percentage increase would be well below the screening criteria on North Hayes Road where the traffic would be split into two directions. In addition, the reduction in staff/non-HGV traffic would offset some of the potential increase in HGV traffic.

The 2016 assessment concluded that a moderate adverse impact on annual mean nitrogen dioxide concentrations would arise at two receptor locations on North Hayes Road. At this location, traffic from the facility was predicted to increase annual concentrations by $0.3 \mu\text{g}/\text{m}^3$ which is less than 1 % of the objective, but due to the existing high concentrations of pollutants this was classed as a moderate impact. At all other receptor locations and impacts on PM_{10} and $\text{PM}_{2.5}$ were predicted to be negligible. Overall it was concluded that traffic associated with the proposed development would have a minor adverse effect on air quality.

Recent monitoring has shown that air quality concentrations in the vicinity of the development have improved. In particular, the two sites used for model verification in 2016 (HS54 and HIL5) have both shown a reduction in concentrations. This improvement would be reflected in future predicted concentrations if the modelling was completed with the new traffic numbers.

On this basis, the results of the previous assessment of operational traffic impacts can be considered to remain valid as a conservative worst case. The assessment concluded that the impacts were slight adverse and not significant.

6. DUST MITIGATION

6.1 Introduction

The following dust mitigation measures will be employed on the application site. A number of modifications have been made to the original design to further reduce the potential for dust emissions to originate from the site, in particular through the additional enclosure of the WRP operation and storage bays and increasing the height of the boundary walls. All the dust mitigation measures are detailed below.

6.2 Environmental Permitting Regulations

The proposed development has a permit to operate under the Environmental Permitting (England and Wales) Regulations 2010. As a waste handling operation the permit is issued and regulated by the Environment Agency¹⁸. As a new facility, to obtain a permit, the facility has had to demonstrate how it would comply with the Best Available Techniques (BAT) to prevent significant emissions of dust arising from the site. As such Quattro has introduced the most up to date techniques available to mitigate dust impacts.

6.3 Facility Design and Operational Controls

6.3.1 Delivery of Waste to Site

All waste delivered to the application site would be in sheeted vehicles to prevent wind whipping and dispersion of particles during transit. The majority of waste would be of mixed source including wood, plastics, metals and aggregates. Wood, plastics and metals would not give rise to significant dust emissions and aggregate is primarily made up of large grains which are not generally susceptible to suspension in air. However, there would be some smaller dust particles within the waste and there is a risk of emissions to air due to wind-whipping, although this would be limited to during unloading, storage and sorting of material. Enclosed areas for undertaking these activities are detailed below together with measures to dampen material.

6.3.2 Weighbridge Control

All deliveries to the site will pass through the weighbridge where CCTV will be used to check the incoming deliveries arriving on-site to ensure that they comply with the Quattro site permit. The camera will be positioned to provide a clear view of the waste so that adequate preparation can be made if waste is likely to contain a high degree of fine material.

6.3.3 Enclosed Waste Tipping Building

All waste deliveries will pass to the covered waste tipping building where they will be tipped from the delivery vehicles. This is the only area where incoming waste to the site will be tipped and stored and will be secured as such by condition.

The building will be approximately 10.8m tall (ridge level), enclosed on the north, south and west sides and fully roofed. The eastern side would remain open to allow access but will be fitted with water sprays at roof level just inside the building to prevent dust emissions escaping from the building. Spray nozzles will be located at maximum 3m intervals.

Tipping activities would be under the direction of a banksman who would be able to quickly identify if a delivery contains particularly dusty material and where necessary use available water sprays from a water bowser which will be kept permanently on standby to dampen down material as required.

¹⁸ Reference EA/EPR/GB3803XM/V002 (variation application submitted January 2020)

6.3.4 Stage 1 of the Waste Recycling Plant

The initial stage of the Waste Recycling Plant (WRP) comprises an initial screen and conveyor and the trommel screen to remove aggregates. This will be housed at the rear of the enclosed waste tipping building, thus preventing possible dust emissions. After passing through the trommel screen the remaining waste will pass by covered conveyor from the enclosed tipping building to the enclosed picking station. As part of the site revisions it has been decided to enclose the area between the tipping building and the picking station to further reduce the potential for dust emissions.

6.3.5 Enclosed Picking Station

Within the picking station the waste is passed along a conveyor belt and is hand sorted into various waste streams such as cardboard, plastics, wood and metal. The waste is passed down various chutes into skips located beneath the picking station in covered bays to prevent dust blow off. The back wall of the covered bays will be continuous with the picking station cabin above to prevent dust blow off. Skips which are full will either be removed to the material stock bays or covered and removed directly off-site for ongoing processing.

6.3.6 Final Product

The remaining waste materials which are predominantly hard core will be collected in a skip located in the final product building at the end of the picking station line. This building will be enclosed on north, west and east site and fully roofed to prevent dust blow off. A water spray will be provided on the open side of the building to further prevent the escape of dust emissions. As part of the site revisions it has been decided to enclose the area between the picking station and the final product building to further reduce the potential for dust emissions.

6.3.7 Concrete Batching Plant

The CBP will be fully enclosed and will be of the latest design suitable for use in urban locations. The optimum time for delivery of Readymix concrete is around 30-45 minutes and therefore batching plant are designed to be located in urban areas with stringent built in dust control. As a policy Quattro does not take on any projects where the travelling time is anticipated to exceed 60 minutes.

Aggregate brought into site to be fed into the aggregate bays or feed hoppers will arrive in a dampened state. It will be checked before tipping and dampened further as required. Similarly, aggregate generated from the WRP and stored in the aggregate bays will be maintained in a dampened condition.

All aggregate for use in the CBP would be transferred into the plant via enclosed covered conveyors and stored within enclosed integral aggregate storage bins.

Cement for use in the CBP would be delivered by tanker and discharged by a sealed pressurised pipe system into sealed cement silos. The silos would be fitted with dust filters and high-level pressure sensor alarms which would be linked to automatic shut-off valves on the fill pipe.

The loading and mixing process for the batching of concrete would be fully computer controlled and would occur within a fully enclosed mixer.

The plant will produce wet-batched concrete only which would be dropped into the mixer trucks for onward distribution. As a wet batch process it would therefore not generate dust.

6.3.8 Material stock bays

Overflow storage of aggregates to be used in the CBP will be stored in covered material stock bays to prevent wind whipping. The material is inherently damp and is therefore not considered a significant source of dust. However, automated sprays are proposed on the stock bays to ensure that the materials are kept damp. Aggregate stock bays are located on the southern wall of the WRP incoming waste building and south of the CBP.

The recycled material stock bays located on the eastern boundary similarly include side / roof covering fitted with automated sprays and form part of the improved boundary containment surrounding the WRP (see below).

6.3.9 Boundary Wall

Further enclosure of operational activities and potential sources of dust will be provided by the boundary walls as shown on the site plan. A sleeper and steel 3.5m high will form the western and northern boundaries. This would comprise a 0.5m high concrete stub with 3m of sleepers and steel built up from the concrete wall.

On the eastern boundary and extending into the site around the area to be used for the WRP a 5m high concrete wall is to be provided fitted with automatic sprinklers approximately every 10m. The wall along the eastern boundary is to be fitted with a short canopy to further reduce dust emissions.

6.3.10 Service Yard

The site has been arranged so as to minimise HDV movements within the operational areas of the site, with the parking areas being kept separate from the CBP and WRP.

The whole of the service yard will be laid to concrete to allow easy cleaning and to reduce possible dust blow-off from the movement of vehicles over unmade ground. The yard will be kept clean through the use of the road sweeper (see below).

The yard area immediately south of the waste picking station will be kept clean and damp through the use of a mobile dust suppression spray unit and road sweeper.

6.3.11 Wheel wash

All vehicles leaving the CBP and WRF will be required to pass through the wheel wash which is located between the operational area of the site and the parking to the south. This will prevent vehicles tracking mud and other debris onto the main road network.

6.3.12 Mobile Dust Suppression Spray Unit

In addition to the mobile dust suppression spray unit located adjacent to the picking station, a number of additional units will be held on the site to provide further dust mitigation as required. The operation of these machines will be at the discretion of the site manager and banksman. The units produce a fine mist which is highly effective in mitigating dust emissions from fugitive sources. In addition, a mobile water bowser will also be kept within the tipping building which can be used to provide rapid damping of smaller areas.

6.3.13 Road Sweeper

A road sweeper vehicle will be kept at the site and used continually during site working hours to clean the yard and access road up to Southall Lane. The sweeper will also be used on Southall Lane, up to Hayes Road when traffic conditions allow. This will prevent the track out of material onto the main road network.

6.4 Comparison with Previous Approved Scheme

The operations which are to be undertaken at the proposed development are the same as that had been previously approved. The design of the site and the structures it will contain are broadly similar, however a number of design changes have been made to improve dust mitigation. The key difference in the site layout is that the building for incoming waste has been re-orientated so that its opening is reduced and faces east (towards Southall Road) rather than south. The revised scheme provides for full enclosure along the eastern boundary by a combination of recycled stock bays and a new concrete wall which has been increased in height and which will have additional dust mitigation in the form of sprinklers along these structures. The concrete wall is also extended round along the southern boundary of the waste operation area divorcing it from the parking area – again providing further enclosure and mitigation. The revised proposal is not considered to result in any further impact in air quality terms over and above consented scheme ref: 01032/E/P44 and should therefore continue to be seen as acceptable.

6.5 Dust Management Plan

Details were previously submitted in response to the requirements of Planning Condition 18, Dust Management and Monitoring Plan, attached to the original planning permission 01032.E/P44. This has been updated to reflect the amended proposals and a comprehensive Dust Management Plan has been produced to cover the management procedures that must be undertaken and to give clear instructions to site workers on the actions that must be taken to prevent dust emissions. This plan has been submitted as a separate free standing document with the application submission.

The plan would be routinely reviewed at least once per month and updated as necessary. The plan covers all of the measures outlined below.

6.5.1 Visual Inspections

Visual inspections of the facility including the immediate external perimeter of the facility is to be undertaken by either the site manager or one of the senior site operatives at least twice per day to check for visual signs of dust deposition and dust emissions. The results of these inspections are to be recorded in the site log together with information on weather conditions, wind speed and direction. In the event that visible signs of dust deposition or dust emissions are detected, the source of the dust is to be immediately investigated and corrective action taken.

6.5.2 Maintenance

Effective control of airborne dust emissions requires the maintenance and proper use of all plant and equipment. A programme of planned maintenance will be carried out on all plant, in accordance with the manufacturer's recommendations, to ensure it operates to optimum efficiency. This includes all dust suppression equipment.

Stocks of essential spares and consumable items will be held at or kept readily available at short notice.

Any malfunctions or breakdowns will be dealt with promptly and operations adjusted or suspended until normal working can be restored. All malfunctions will be recorded in the site logbook.

The water supply will be adequately protected against frost to ensure its availability for dust suppression at all times.

6.5.3 Site Management

The site manager will exercise, either personally or by delegation to suitably trained and responsible staff, day to day control on site. The site manager will be responsible for ensuring full compliance with the site Dust Management Plan and satisfactory working of the whole site.

Staff at all levels will receive the necessary training and instruction in their duties relating to all operations and the potential sources of dust emissions.

Any member of staff who wilfully or negligently fails to comply with the provisions of the Dust Management Plan will be subject to disciplinary action. Any external hauliers who fail to observe the requirements in respect of vehicle operations will be banned from the site.

The Site Manager will ensure that a high standard of housekeeping is maintained at all times.

6.5.4 Complaints and Neighbour Liaison.

In the event of a complaint concerning dust, the complaint will be recorded and reported to the Site Manager, who would be required to take immediate action to investigate the source of the dust and to take corrective action as required. A prompt response will be required to be made to the complainant and a record, including copies of all correspondence and file notes, will be made in the complaints register.

The Council and the EA would be advised in writing, within one week of any dust complaint received, together with details of the findings of the investigation and any corrective measures which have been taken.

A neighbour liaison protocol will be put in place so that details of the site manager's name and contact details are provided before commencement of operation and updated as required.

7. CONCLUSIONS

A new air quality assessment has been required to accompany a retrospective planning application for the Waste Recycling Facility (WRF) and Concrete Batching Plant (CBP), which has been built on Southall Lane, Hayes. Initial planning permission for the facility was obtained in 2018, but since then a number of changes have been made during the detailed design stage and subsequent build out of the site. These changes have primarily arisen due to a reduction in the site developable area, but the opportunity has also been taken to improve dust mitigation measures.

A review of baseline air quality in the vicinity of the site has indicated that there has been a gradual reduction in annual mean nitrogen dioxide concentrations at roadside locations since the previous submission, although concentrations are still marginally above the air quality objective. At background locations concentrations are predicted to meet relevant objectives.

Parking provision for both cars and Heavy Duty Vehicles (HDVs) has been reduced compared to with the numbers provided within the planning submission. An updated traffic assessment has been undertaken by the applicant's transport consultant and has indicated that car movements arising as a result of the site's operation will be reduced compared with those predicted in the original planning submission. A small increase in HDV movements has been predicted, but when calculated as annual average daily traffic the increase would be less than 25 HDV vehicles per day and therefore the results of the previous air quality assessment are considered to remain valid.

The results of the detailed modelling assessment of operational traffic impacts carried out for the 2016 application are considered to remain valid as a conservative worst case. The assessment concluded that the impacts were slight adverse and not significant.

Quattro is committed to ensuring that the facility can operate without causing dust impacts at neighbouring facilities. A number of changes have been made to the original design of the facility to further mitigate potential dust impacts. Primarily these comprise:

- Additional enclosure of parts of the waste recycling plant;
- Additional enclosure of the storage bays;
- Greater separation of the operational areas from the staff welfare, office and parking areas of the site; and
- Increase in the height of the boundary wall surrounding the WRP.

In addition, the facility has obtained a permit to operate under the Environmental Permitting (England and Wales) Regulations 2010. As a waste handling operation the permit is issued and regulated by the Environment Agency¹⁹. As a new facility, to obtain a permit, the facility has had to demonstrate how it would comply with the Best Available Techniques (BAT) to prevent significant emissions of dust arising from the site. A comprehensive dust management plan has also been produced and will be submitted to the London Borough of Hounslow as part of this application in light of the requirement contained within planning condition 18 attached to 01032/E/P44.

The operations which are to be undertaken at the proposed development are the same as that had been previously approved. The design of the site and the structures it will contain are broadly similar, however the design changes which have been made would further improve dust mitigation. The conclusions of this assessment are the same as those for the previously approved scheme in that through the provision of the designed in mitigation measures together with management procedures outlined within the dust management plan it is considered that the

¹⁹ Reference EA/EPR/GB3803XM/V002 (variation application submitted January 2020)

facility can be operated without causing significant amenity effects at the nearest sensitive receptors including the adjacent commercial properties. .

APPENDIX 1

**WASTE RECYCLING FACILITY AND CONCRETE BATCHING PLANT,
SOUTHALL LANE, HAYES, AIR QUALITY ASSESSMENT UK11-23192**

**WASTE RECYCLING FACILITY AND CONCRETE BATCHING PLANT,
SOUTHALL LANE, HAYES, ADDENDUM AIR QUALITY ASSESSMENT UK11-
23192**

Intended for
Quattro UK Ltd

Date
December, 2016

Project Number
UK11-23192

WASTE RECYCLING FACILITY AND CONCRETE BATCHING PLANT, SOUTHALL LANE, HAYES AIR QUALITY ASSESSMENT

WASTE RECYCLING FACILITY AND CONCRETE BATCHING PLANT, SOUTHALL LANE, HAYES AIR QUALITY ASSESSMENT

Project No. **UK11-23192**
Issue No. **Final**
Date **22/12/2016**
Made by **Jo Kirk**
Checked by **Lesley Vining**
Approved by **Lesley Vining/Michelle Wheeler**

Made by:

Checked/Approved by

This report has been prepared by Ramboll Environ with all reasonable skill, care and diligence, and taking account of the Services and the Terms agreed between Ramboll Environ and the Client. This report is confidential to the Client, and Ramboll Environ accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known, unless formally agreed by Ramboll Environ beforehand. Any such party relies upon the report at their own risk.

Ramboll Environ disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the Services.

Version Control Log

Revision	Date	Made by	Checked by	Approved by	Description
A	25/11/2016	JK	LV	LV	Internal Draft
B/C	09/12/16	JK	LV	LV/MW	Internal Draft
1	16/12/16	JK	LV	MW	Issue for Client Comment
Final	22/12/16	JK	LV	MW	Final for Planning Submission

CONTENTS

EXECUTIVE SUMMARY	I
1. INTRODUCTION	1
1.1 Overview	1
1.2 Background	1
1.3 Scope and Objectives	1
2. APPLICATION SITE	3
2.1 Site Location	3
2.2 Site Description	4
3. PROPOSED DEVELOPMENT	6
3.1 General	6
3.2 Aim of Proposed Development	6
3.3 Proposed Quantum and Land Uses	6
3.4 Proposed Development Operating Capacity	11
4. LEGISLATION AND POLICY FRAMEWORK	12
4.1 Background	12
4.2 International Legislation and Policy	12
4.3 Local Air Quality Management	12
4.4 National Legislation	15
4.5 Regional Policy	17
4.6 Local Policy	18
4.7 Additional Guidance	18
5. ASSESSMENT METHODOLOGY	20
5.1 Introduction	20
5.1 Baseline	20
5.2 Construction Impacts	20
5.3 Operational Dust Emissions	20
5.4 Operational Traffic Impacts	21
6. BASELINE ASSESSMENT	26
6.1 Automatic Monitoring	26
6.2 Non-Automatic Monitoring	27
6.3 Defra background Maps	29
6.4 Air Quality at Application Site	30
7. CONSTRUCTION STAGE	31
7.1 Potential Impacts	31
7.2 Risk Assessment of Dust Effects	32
7.3 Mitigation	34
8. OPERATIONAL STAGE	36
8.1 Dust Emissions	36
8.2 Traffic Impacts	38
8.3 Mitigation	41
9. CUMULATIVE IMPACTS	42
10. ASSESSMENT OF RESIDUAL EFFECTS	44
10.1 Construction Stage Effects	44
10.2 Operational Stage Effects	44
10.3 Cumulative Effects	44
11. SUMMARY AND CONCLUSIONS	45

LIST OF FIGURES

Figure 2.1: Application Site Location	3
Figure 3.1: Proposed Development Layout	8
Figure 3.2: Proposed Elevations of C&D Waste Recycling Facility	9
Figure 3.3: Proposed Elevations of CBP Waste Recycling Facility	10
Figure 5.1: Receptor Locations	23
Figure 6.1: Location of Monitoring Sites	29
Figure 7.1: Windrose for Heathrow 2015	32

LIST OF TABLES

Table 2.1: Surrounding Land Uses	4
Table 4.1: Relevant Objectives set out in the Air Quality Strategy	13
Table 4.2: Locations Where Air Quality Objectives Apply	13
Table 5.1: Receptor Locations used in Modelling	22
Table 5.2: Annual Man Background Concentrations used in Modelling Assessment	24
Table 5.3: Impact Descriptors for Individual Receptors	25
Table 6.1: Monitoring in Proximity to Proposed Development	26
Table 6.2: Recorded NO ₂ Data at Automatic Monitoring Locations	26
Table 6.3: Recorded PM ₁₀ Data at Automatic Monitoring Locations	27
Table 6.4: Annual Mean NO ₂ Diffusion Tube Results(bias adjusted) µg/m ³	28
Table 6.5: Annual Man Background Concentrations from Defra Background Maps	29
Table 7.1: Dust Emission Magnitudes	32
Table 7.2: Sensitivity of Receptors	33
Table 7.3: Summary of Effects Without Mitigation	34
Table 8.1: Predicted Annual Mean NO ₂ Concentrations (µg/m ³)	38
Table 8.2: Predicted Annual Mean PM ₁₀ Concentrations (µg/m ³)	39
Table 8.3: Predicted Number of Days Exceeding the PM ₁₀ 24-hour objective limit of 50 µg/m ³	40
Table 8.4: Predicted Annual Mean PM _{2.5} Concentrations (µg/m ³)	40
Table 9.1: Predicted Annual Mean NO ₂ Concentrations (µg/m ³)	43

EXECUTIVE SUMMARY

Ramboll Environ was commissioned by Quattro UK Ltd to undertake an Air Quality Assessment in respect of the development of land on Southall Lane, Haye, UB2 5XJ. The development proposals would comprise a construction and demolition waste recycling facility; a concrete batching plant; and associated parking, ancillary structures and facilities. Quattro UK will seek planning permission for temporary use of the site for three years.

The site falls within the London Borough of Hounslow who has declared the whole borough an Air Quality Management Area due to exceedences of the annual mean and 1-hour NO₂ objectives. The site therefore has the potential to impact air quality within the AQMA and therefore air quality has to be considered as part of the planning process.

It is inevitable that with any development construction activities would cause some disturbance to those nearby. The assessment has predicted a low risk of effects at nearby receptors prior to the implementation of any on-site mitigation. However, following the implementation of appropriate mitigation measures, which would be set out within a Dust Management Plan, impacts associated with the construction of the development are likely to be negligible.

A review of the proposed on-site operations indicates that the development would be designed to meet the best available techniques set out within the Defra guidance note 3/01(12) to minimise emissions of dust. Furthermore, the majority of operations would be carried out within enclosed or screened areas or would be damped down to prevent wind-whipping. Operational dust emissions from the proposed development are therefore unlikely to be significant. Furthermore, given the separation distances between source and receptor the impact of residual emissions is highly unlikely to result in a significant effect at the nearest sensitive receptors.

The ADMS dispersion model has been used to predict the impact of traffic generated by the operational development on local NO₂, PM₁₀ and PM_{2.5} concentrations. The predicted change in traffic has been based on worst-case assumptions, which assumes amongst others no improvement in background air quality.

Traffic associated with the proposed development is predicted to increase annual mean NO₂ concentrations by 0.3 µg/m³. However because of the existing high pollutant concentrations this relatively minor increase is predicted to result in a moderate adverse impact on NO₂ concentrations at receptors along North Hayes Road. At all other locations a negligible impact is predicted and on PM₁₀ and PM_{2.5} concentrations overall.

As part of the development proposals the Applicant's existing construction and demolition recycling facility located on Lionel Road, Brentford would be relocated to the site which would reduce vehicle movements within Brentford resulting in a positive impacts on air quality in this area.

Overall the impact of traffic emissions from the proposed development is considered to be small. On this basis, it is considered that the completed proposed development would result in at worst a **Minor Adverse** effect on local air quality and at identified receptors. Accordingly the proposed development is not likely to give rise to significant effect on air quality.

1. INTRODUCTION

1.1 Overview

Ramboll Environ UK Limited (Ramboll Environ) was commissioned by Quattro UK Ltd ('the Applicant') to undertake an Air Quality Assessment in respect of the proposed development of land located on Southall Lane, Hounslow, UB2 5XJ ('the application site'). The assessment is required in connection with the proposed redevelopment of the application site, which will comprise a construction and demolition (C&D) waste recycling facility; a concrete batching plant (CBP); and associated parking, ancillary structures and facilities. The Applicant will seek planning permission for temporary use of the application site for three years.

The application site falls within the London Borough of Hounslow (LBH) who has declared the whole borough an Air Quality Management Area (AQMA) due to exceedences of the annual mean and 1-hour NO₂ objectives. The application site therefore has the potential to impact air quality within the AQMA and therefore air quality should be considered as part of the planning process.

This report presents the findings of a detailed air quality assessment of the potential impacts of the proposed development on local air quality during both the construction and operational stages. For both phases the type, source and significance of potential impacts are identified and the measures that should be employed to minimise the impacts are described.

1.2 Background

The Applicant currently operates an existing C&D waste facility within the LBH, located approximately 7 km to the east on Lionel Road, Brentford. As part of the Application this facility would be relocated to the application site with the existing 40 jobs also being relocated to the new site.

1.3 Scope and Objectives

The application site is located to the west of Southall Lane, in the north-west of the LBH. Surrounding land-uses are mainly commercial and industrial facilities; however, there are residential and educational facilities in the wider area. The proposed development would include ground preparation and the construction of new facilities within the existing application site, which has the potential to result in adverse dust and PM₁₀ impacts on nearby sensitive receptors.

Consideration has therefore been given to the potential for emissions of dust to arise during the demolition and construction phases. A qualitative assessment of the risk of dust impacts has been carried out using the supplementary planning guidance (SPG) produced by the Mayor of London on dust and emissions from construction and demolition¹ to identify the appropriate level of mitigation that should be applied to ensure impacts from construction activities can be effectively mitigated.

During operation of the new facility D&C waste would be delivered, segregated, crushed and then recycled either within the CBP or distributed for use elsewhere. There is the potential for dust to be emitted during the movement and loading of the recycled material emissions which has the potential to result in impacts at nearby sensitive receptors. The risk of dust impacts during operation has been undertaken through a review of site operations, consideration of meteorological conditions and receptor-source separation distances.

Aggregate waste would be delivered to the application site by heavy duty vehicles (HDV) and it is understood that during operation the development would generate 200 HDV on the adjacent road network. A detailed air quality assessment has therefore been undertaken to assess the effects of vehicle emissions in accordance with the guidance criteria provided in the Environmental

¹ The Greater London Authority, 2014. The Control of Dust and Emissions from Construction and Demolition

Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) guidance², concentrating on nitrogen dioxide (NO₂) and particulate matter (PM₁₀), the pollutants most associated with traffic emissions.

Land to the immediate west of the application site benefits from planning consent for the Hounslow Waste Depot (planning reference: P/2016/0685) (HWD). Accordingly, this assessment has considered the cumulative impact of the proposed development in conjunction with potential impacts arising from the HWD site.

This report considers the likely significant effects on air quality associated with the construction and operation of the proposed development. The specific objectives of the report are to:

- establish the air quality baseline;
- describe the assessment methodology and significance criteria used in completing the assessment;
- identify the potential impacts, including direct and indirect impacts;
- describe the mitigation measures proposed to address potential impacts; and
- assess the residual effects remaining following the implementation of mitigation.

The assessment has been carried out taking into account relevant local and national guidance and regulations.

1.3.1 Sources of Information

In undertaking the assessment the following information sources have been used:

- Traffic data provided by the Applicant's transport consultants i-Transport;
- LBH 2015 Air Quality Updating and Screening Assessment (USA)³;
- 2015 monitoring data supplied by LBH;
- London Borough of Hillingdon 2016 Annual Status Report⁴;
- London Air (www.londonair.org.uk);
- UK-AIR (<https://uk-air.defra.gov.uk>); and
- Magic (<http://magic.defra.gov.uk>).

1.3.2 Consultations

The scope of the assessment has been discussed and agreed with the Air Quality Officer at LBH Surinderpal Suri by means of e-mail on 25th November 2016.

² EPUK & IAQM, 2015. Land-use Planning & Development Control: Planning for Air Quality

³ LBH, 2015 Air Quality Updating and Screening Assessment

⁴ London Borough of Hillingdon, 2016 Annual Status Report

2. APPLICATION SITE

2.1 Application Site Location

The application site is located to the west of Southall Lane and previously formed part of the southern extent of the Western International Market. The location of the application site is shown in Figure 2.1.



Figure 2.1: Application Site Location

The application site is bound to the:

- north by Costco Wholesale with associated car parking facilities, beyond which lies Hayes Road;
- east by Southall Lane, beyond which lies Airlinks Gold Club and the David Lloyd Sports Centre;
- south by open space which comprises grassland and scrub with a pond, beyond which lies the M4; and
- west by an area of hardstanding which has been granted planning consent for the 'HWD', beyond which lies commercial buildings, car parking areas and the A312 Parkway.

As indicated above the majority of land-uses in the immediate vicinity of the application site comprise a mix of commercial and industrial facilities. In the wider area there is a mix of uses including commercial, industrial, residential, educational and open (recreational) space. The nearest residential receptors are located approximately 250 m to the north-east on Convent Way.

A summary of surrounding land-uses and their distance from the application site is provided in Table 2.1.

Table 2.1: Surrounding Land Uses		
Direction	Description	Distance
North	Costco Wholesale Warehouse and associated car parking	0 – 195 m
	Commercial and industrial uses, including Dhillon of London, a timber and builders merchants, an accident repair centre, A1 Gb Tyres, Firmenich Food Products Suppliers and associated car and HGV parking	220 – 300 m
	Grand Union Canal	300 m
North-east	Commercial and industrial uses including Muirhead Avionics and Allport Cargo services with associated car and HGV parking	0 – 270 m
	Residential properties on Convent Way and Wentworth Road and The Common	250 m and beyond
	Grand Union Canal	350m
East	Airlinks Gold Club with associated parking and commercial buildings	40-800 m
South-east	Commercial and industrial uses including David Lloyd Heston Gym, Middlesex Tennis Club, associated car parking and Aneel Sports retail shop	50 – 250m
South	Designated Metropolitan Open Land (MOL), green belt and Archaeological Priority Zone	0 – 360 m
	Residential properties on High Street	700 – 1100 m
	Cranford Community College	700 – 900 m
	Cranford Village Conservation Area	900 – 1100 m
South-west	Designated Metropolitan Open Land (MOL), green belt and Archaeological Priority Zone	0 – 360 m
	Hartlands Residential site	530 – 630 m
	Cranford Community College playing fields	630 – 1000 m
	Cranford Village Conservation Area	900 – 1100 m
West	HWD Site	0 – 140 m
	Western International Market and associated parking	140 – 390 m
	Green Belt area	430 – 650 m
	Residential properties	650 m and beyond
North-west	Costco Wholesale warehouse	0 m
	Brentford Fountain Western International Market Grade II listed structure	120 m
	Commercial and industrial uses including Virtus Data Centre building and further free standing commercial/retail units fronting Hayes Road	50 – 280 m and beyond

2.2 Application Site Description

The application site is roughly rectangular in shape and covers an area of approximately 1.73 hectares (ha). The topography of the application site is generally level at 30 m AOD; however the

application site is approximately 1 to 1.5 m lower than Southall Lane such that the eastern boundary forms a sloped embankment.

The application site previously formed part of the Western International Market. It is now largely covered by gravel and scrub vegetation, with trees present along the eastern embankment. A tarmac road and an area of concrete hardstanding in the west of the application site link to a tarmac access road to the south. The access road links to Southall Lane in the south-eastern corner of the application site and is bounded to the south by a vegetated bund.

The application site has a Public Transport Accessibility Level (PTAL) of 1B. It is located within easy access to the junction with the M4 motorway (approximately 600 m to the south-west), is served by two bus routes (the 105 and H25) with bus stops approximately 100 m walking distance on Southall Lane. A further bus route (the 185) is located within 500 m from the application site on Wentworth Road. The nearest rail station is Hayes and Harlington, 1.4 km to the north-west and the nearest underground is Hounslow West (2.7 km to the south-east).

2.2.1 Sensitive Receptors

Sensitive receptors are considered to be residential and educational facilities and locations with sensitive ecological species such as national and internally designated site for wildlife conservation. As set out in Table 2.1 the nearest residential receptors are located approximately 250 m to the north-east. There are further residential properties to the south and west, along with the Cranford Community College, although these are over 600 m from the application site.

The proposed development would not introduce any new sensitive receptors to the area.

3. PROPOSED DEVELOPMENT

3.1 General

The proposed development would comprise a C&D waste recycling facility, CBP, weighbridge, office, welfare facilities, storage bays and associated staff and HDV parking.

Access to the development would be from Southall Lane with the access point located within the south-western part of the application site. The access lane off Southall Lane would be shared with the adjacent HWD.

The entire development would be set back 8 m from the northern boundary to accommodate an easement for future foul sewer.

3.2 Aim of Proposed Development

The proposed development would accommodate the existing C&D waste facility located on Lionel Road and would provide recycled material for the production of concrete within the CBP and for distribution to construction sites in the wider area.

3.3 Proposed Quantum and Land Uses

The layout of the application site is shown in Figure 3.1.

3.3.1 Construction and Demolition Waste Recycling Facility

The C&D Waste Recycling Facility would be located in the northern and north-eastern extents of the application site and would comprise:

- A waste picking station 6.5 – 9 m high; and
- Centralised stockpiling of incoming waste up to 6 m high.

The plant would include a screen and conveyor, large picking station, trammel screen, small picking station, debris catcher and small picking cabin. The elevations of these elements are shown in Figure 3.2.

D&C waste arriving at the facility would be picked up from construction sites within the surrounding area by the Applicants fleet of vehicles or dropped off by customers directly. The waste would be segregated in the first instance into different waste streams i.e. timber, plastics etc. The individual waste streams would be loaded onto a conveyor belt and sorted in a picking station through a combination of both automated and manual processes. The resulting waste would then be crushed and washed, producing high grade aggregate for use in the adjacent CBP or recycled sand and various grades of shingles to be distributed by the Applicant.

3.3.2 Concrete Batching Plant

The CBP would be located in the northern and north-western parts of the application site and would comprise:

- Three cement silos up to 8 m high;
- Mixing and production plant up to 15 m high;
- Batch cabin up to 4 m high; and
- Feed hoppers and covered conveyor belts.

The elevations of the CBP are shown in Figure 3.3

3.3.3 Storage

Material stockbays would be located along the north-western boundary of the application site. The bays would be 5 m high and would store aggregate, sand and stone.

3.3.4 Office and Welfare Facilities

Prefabricated office and welfare buildings up to 6.8 m high would be located in the south-western and western extents of the application site at the access point together with weighbridge facilities.

3.3.5 Parking

On-site parking would comprise:

- 50 staff car parking spaces along the western boundary;
- 20 cycle parking spaces along the south-western boundary; and
- 50 HDV parking spaces along the southern boundary.

The HDV fleet will play a major role in the supply and removal of material to and from the operational site. The majority of movements leaving the application site in the morning would be of vehicles filled with residual waste to be delivered to landfill or of vehicles filled with recovered waste to supply sub-base contracts. Where possible the fleet of HDV's will be managed to return to Site in the evenings fully loaded with aggregate to feed the CBP, thus minimising the HDV movements to and from the application site.

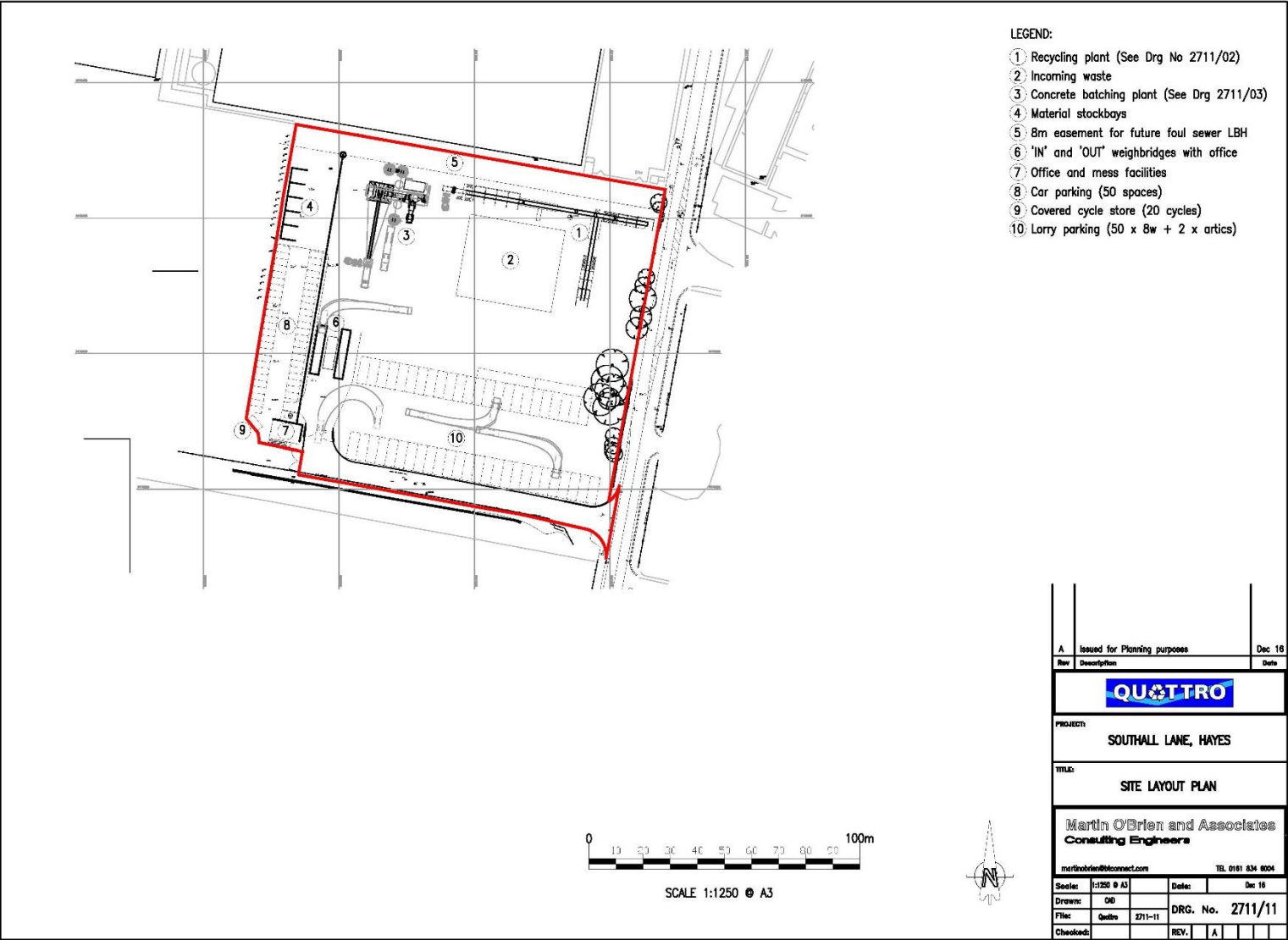


Figure 3.1: Proposed Development Layout

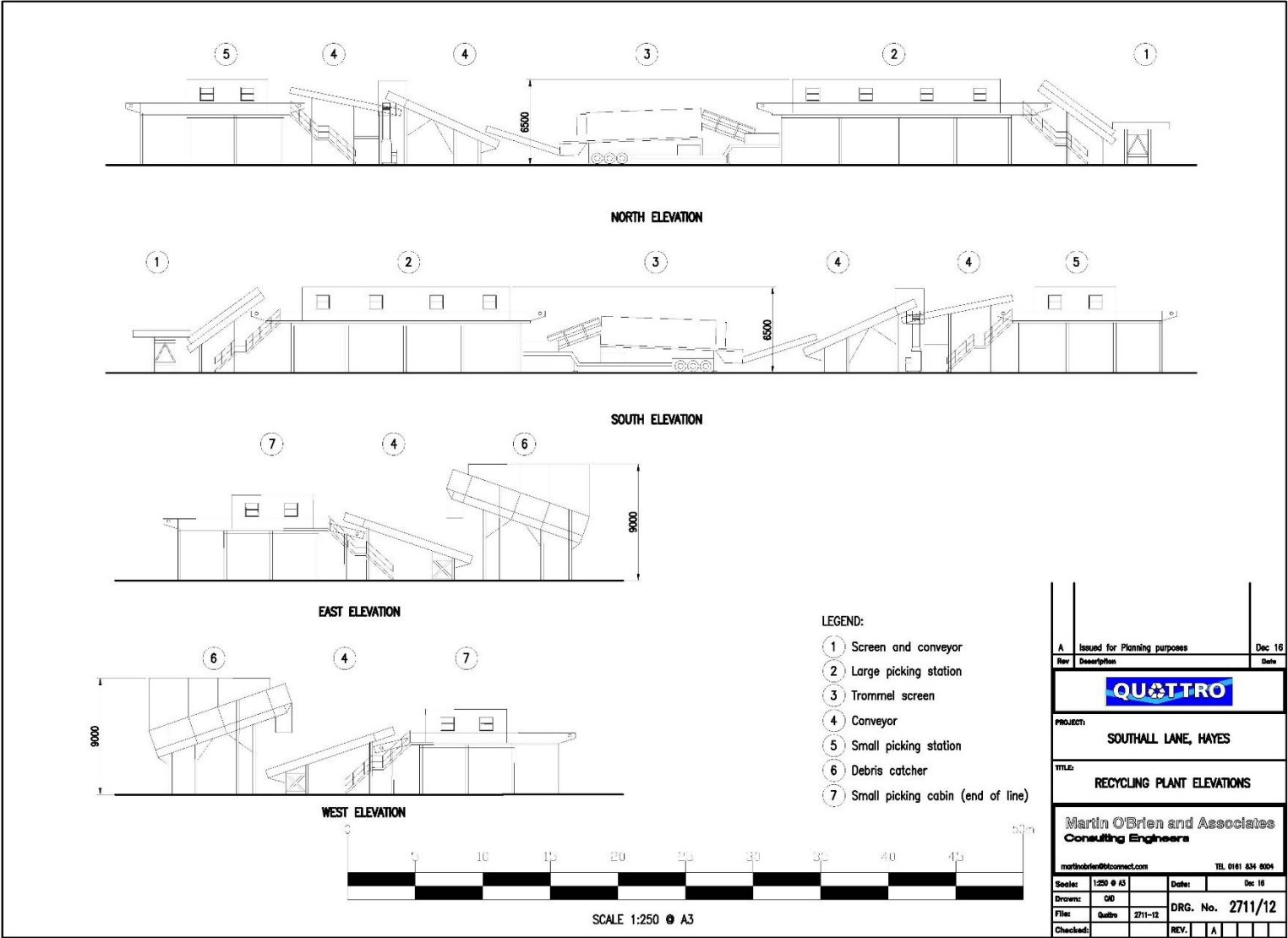


Figure 3.2: Proposed Elevations of C&D Waste Recycling Facility

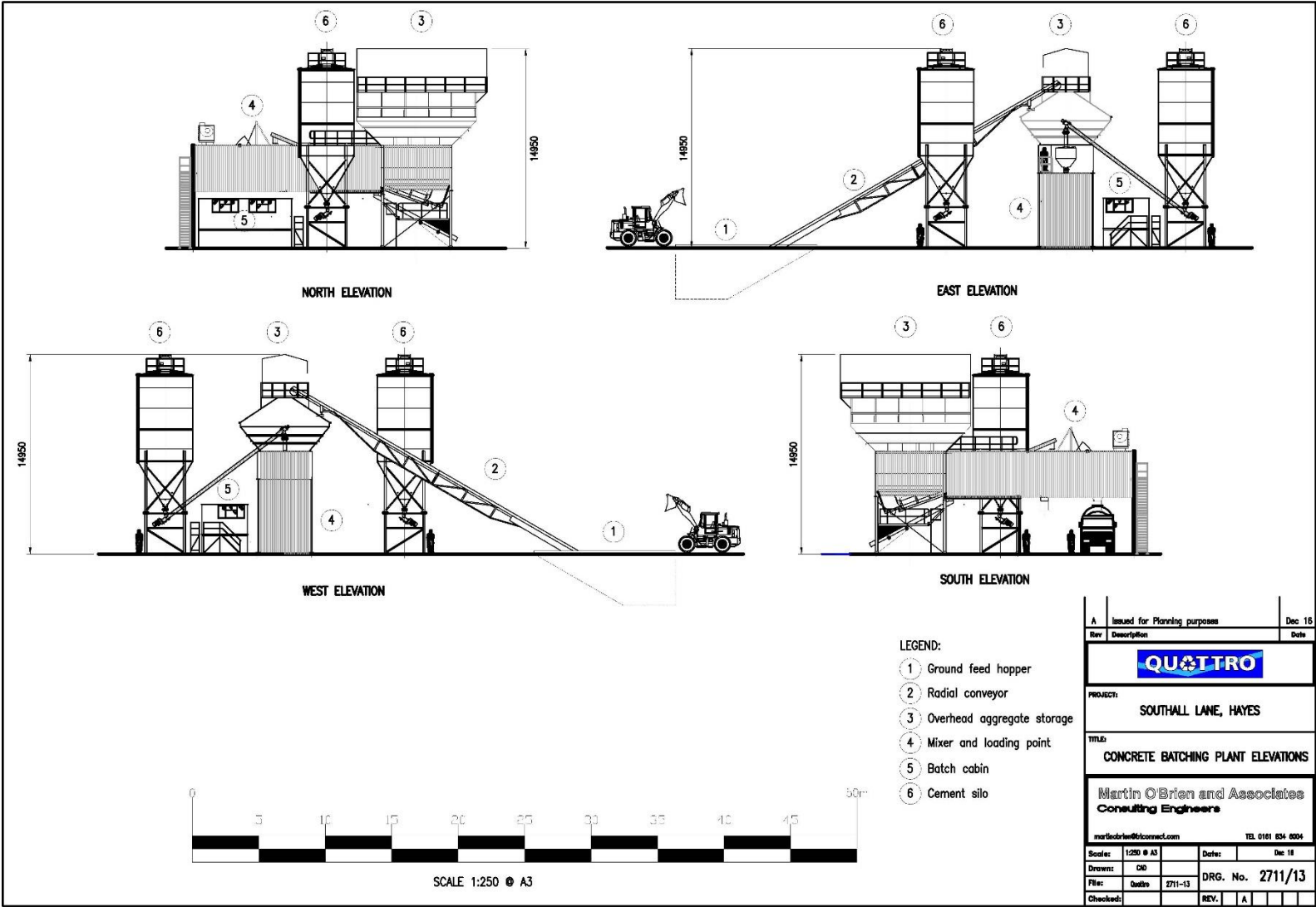


Figure 3.3: Proposed Elevations of CBP Waste Recycling Facility

3.4 Proposed Development Operating Capacity

3.4.1 Construction and Demolition Waste Recycling Facility

C&D waste brought to the Application Site would primarily come from the A4/M4 corridor and Heathrow and would be imported by a variety of HDV ranging from 7.5 tonners to 16 tonne grab lorries.

It is envisaged that a total of 150,000 tonnes of C&D waste would be imported per year, equating to 2,885 tonnes per week. Approximately 15,000 tonnes of the recycled material produced would be high grade recycled material which would be fed directly into the CBP. The remainder of the material would be distributed to service local contracts and customers. This material would be loaded directly from the stock bays by front end loaders onto lorries and transported to the respective delivery sites.

3.4.2 Concrete Batching Plant

The C&D facility would supply 15% of the aggregate required by the CBP plant in the form of recycled material. The remaining aggregate and cement requirement will be imported to the proposed development by HDV. The plant is expected to have an output of around 50,000 m³ of concrete per year.

3.4.3 Operating Hours

In terms of processing waste the facility would operate between 7am – 6pm Monday to Saturday. However, the facility would need to be able to receive material 24 hours a day, 7 days a week to be able to run responsively to customer requirements.

It is proposed to operate the CBP 24 hours a day, 7 days a week to be able to service anticipated market requirements and enable flexibility to service a full range of contracts; however, whilst the ability to operate 24 hours is important, it is envisaged that for at least 75% of the time the CBP would operate during normal working hours, as set out above. The requirement to operate 24 hours would only apply to the batching plant itself (i.e. the mixing and production of concrete and filling of mixer trucks). A 24 hour operation is not required for supplying aggregate to the plant as the plant would have sufficient integral capacity to be stocked-up during the working day and would have sufficient stored material to operate through the night as and when required.

3.4.4 Vehicle Movements

Traffic data has been provided by the Applicant's transport consultant and have been based on the Applicant's experience at existing facilities.

Taking into account the anticipated capacity of the C&D waste recycling facility as set out above and using a worst case assumption that all material is delivered to the application site by the smaller 7.5 tonne HDV, with the remaining recycled material and residual waste being exported from the application site in 32 tonne HDV, it is envisaged that this part of proposed development's operations would generate a total of 156 HDV vehicle movements per day on the adjacent road network.

With regard the CBP operations it is anticipated that there would be a further 72 HDV vehicle movements per day associated with both the delivery of feed material for operating the CBP and export of the cement output.

In addition to the above the operation of the proposed development is also expected to result in 100 staff movements on the adjacent road network per day, giving a total of 333 vehicle movements generated per day.

4. LEGISLATION AND POLICY FRAMEWORK

4.1 Background

4.2 International Legislation and Policy

The EU Directive 2008/50/EC⁵ on ambient air quality and cleaner air for Europe (the CAFE directive) sets out a series of limit values for the protection of human health and critical levels for the protection of vegetation. Compliance with the EU Limit Values is mandatory for all EU members. The Air Quality Standards Regulations 2010⁶ implements the requirements of the Directive into UK legislation. The Directive contains a series of limit values for the protection of human health and critical levels for the protection of vegetation. These limit values are legally binding and the UK may incur infringement action if it does not meet the required objective limits within the agreed time limits. The UK is currently exceeding the objective limits for NO₂ and PM₁₀ within London and a number of other air quality zones within the UK.

4.3 Local Air Quality Management

4.3.1 National Legislation

The Government's policy on air quality within the UK is set out in the Air Quality Strategy (AQS) for England, Scotland, Wales and Northern Ireland (AQS) published in July 2007⁷, pursuant to the requirements of Part IV of the Environment Act 1995. The AQS sets out a framework for reducing hazards to health from air pollution and ensuring that international commitments are met in the UK. The AQS is designed to be an evolving process that is monitored and regularly reviewed.

The AQS sets standards and objectives for ten main air pollutants to protect health, vegetation and ecosystems. These are benzene (C₆H₆), 1,3-butadiene (C₄H₆), carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), oxides of nitrogen (NO_x), particulate matter (PM₁₀, PM_{2.5}), sulphur dioxide (SO₂), ozone (O₃) and polycyclic aromatic hydrocarbons (PAHs).

The air quality standards are long-term benchmarks for ambient pollutant concentrations which represent negligible or zero risk to health, based on medical and scientific evidence reviewed by the Expert Panel on Air Quality Standards (EPAQS) and the World Health Organisation (WHO). These are general concentration limits, above which sensitive members of the public (e.g. children, the elderly and the unwell) might experience adverse health effects.

The air quality objectives are medium-term policy based targets set by the Government which take into account economic efficiency, practicability, technical feasibility and timescale. Some objectives are equal to the EPAQS recommended standards or WHO guideline limits, whereas others involve a margin of tolerance, i.e. a limited number of permitted exceedences of the standard over a given period.

For some pollutants there is both a long-term (annual mean) standard and a short-term standard. In the case of NO₂, the short-term standard is for a 1-hour averaging period, whereas for PM₁₀ it is for a 24-hour averaging period. These periods reflect the varying impacts on health of differing exposures to pollutants (e.g. temporary exposure on the pavement adjacent to a busy road, compared with the exposure of residential properties adjacent to a road).

Of the pollutants included in the AQS, NO₂, PM₁₀ and PM_{2.5} would be particularly relevant to the proposed development as these are the primary pollutants associated with road traffic. The

⁵ Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe

⁶ Air Quality Regulations 2010 – Statutory Instrument 2010 No. 1001

⁷ The Air Quality Strategy for England, Scotland, Wales and Northern Ireland – July 2007

current statutory standards and objectives for NO₂, PM₁₀ and PM_{2.5} in relation to human health are set out in Table 4.1.

Table 4.1: Relevant Objectives set out in the Air Quality Strategy			
Pollutant	Concentration	Measured As	Date to be Achieved by
Nitrogen Dioxide (NO ₂)	200 µg/m ³ not to be exceeded more than 18 times per year	1-hour mean	31 December 2005
	40 µg/m ³	Annual mean	31 December 2005
Particulate Matter (PM ₁₀)	50 µg/m ³ not to be exceeded more than 35 times per year	24-hour mean	31 December 2004
	40 µg/m ³	Annual mean	31 December 2004
PM _{2.5}	Limit Value 25 µg/m ³	Annual mean	-

The statutory standards and objectives apply to external air where there is relevant exposure to the public over the associated averaging periods within each objective. Guidance is provided within Local Air Quality Management Technical Guidance 2016 (LAQM.TG(16))⁸ issued by Defra for Local Authorities on where the objectives apply, as detailed in Table 4.2. The objectives do not apply in workplace locations, to internal air or where people are unlikely to be regularly exposed (i.e. centre of roadways).

Table 4.2: Locations Where Air Quality Objectives Apply		
Averaging Period	Objectives should apply at:	Objectives should generally not apply at:
Annual Mean	All locations where members of the public might be regularly exposed. Building facades of residential properties, schools, hospitals, care homes, etc.	Building facades of offices or other places of work where members of the public do not have regular access. Hotels, unless people live there as their permanent residence. Gardens of residential properties. Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term.
24 Hour Mean	All locations where the annual mean objective would apply together with hotels. Gardens of residential properties.	Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term.
1 Hour Mean	All locations where the annual mean and 24-hour mean objectives apply. Kerbside Sites (e.g. pavements of busy shopping streets).	Kerbside sites where the public would not be expected to have regular access.

⁸ Department for Environment, Food and Rural Affairs (Defra), 2016. Local Air Quality Management. Technical Guidance LAQM.TG(16)

Table 4.2: Locations Where Air Quality Objectives Apply

	Those parts of car parks, bus stations and railway stations etc. which are not fully enclosed, where the public might reasonably be expected to spend 1-hour or more. Any outdoor locations where the public might reasonably be expected to spend 1-hour or longer.	
--	--	--

4.3.2 Local Air Quality Management – The Environment Act 1995

Section 82 of the Environment Act 1995 requires local authorities to conduct a review of air quality within its area from time to time within the authority's area. LAQM.TG(16) describes a new streamlined approach to the Local Air Quality Management (LAQM) regime, whereby every authority has to undertake and submit a single Annual Status Report/Annual Progress Report within its area, to identify whether the objectives have been or will be achieved at relevant locations by the applicable date. If the objectives are not being met, the authority must declare an Air Quality Management Area (AQMA) (section 83 of the Act) and prepare an action plan (section 84) which identifies measures that will be introduced in pursuit of the objectives.

4.3.3 Local Air quality Management in the London Borough of Hounslow

LBH have undertaken detailed review and assessment of air quality within the borough resulting in the declaration of a borough wide AQMA in 2002 due to exceedences of the annual mean NO₂ objective. An Air Quality Action Plan (AQAP) was subsequently published. Following the recommendation for a Detailed Assessment of hourly mean NO₂ concentrations within the 2011 Progress Report⁹, 2013 Progress Report¹⁰ and the 2014 Progress Report¹¹ the LBH is in the process of amending its AQMA order to include the 1-hour objective for NO₂ across the borough.

4.3.4 London Borough of Hounslow Air Quality Action Plan

The LBH AQAP¹² sets out measures to manage and improve air quality within the borough. These measures have been grouped into the following packages for ease of implementation:

- Switching to cleaner transport modes;
- Tackling through traffic;
- Promotion of cleaner vehicle technology;
- Measures specific to Heathrow Airport;
- Measures concerning local industries and other businesses;
- improving eco-efficiency of current and future developments, including properties owned and run by the Council; and
- actions to be taken corporately, regionally and in liaison with the Mayor.

Of the measures set out within the AQAP, the following are relevant to the proposed development:

- *Adopt a best practice strategy for all proposed demolition and development projects. This will include the use of low emission vehicles and equipment and the use of dust minimisation techniques;*

⁹ London Borough of Hounslow, 2011. 2011 Progress Report for Hounslow

¹⁰ London Borough of Hounslow, 2013. Air Quality Action Plan Progress Report 2013

¹¹ Air Quality Consultants, 2014. 2014 Air Quality Progress Report: London Borough of Hounslow, November 2014

¹² London Borough of Hounslow, 2005. Air Quality Action Plan, May 2005

- *Expand the use of existing mechanisms such as section 106 agreements for improvement in air quality. This agreement will relate to the location of the development with regards of the exceedance areas, the scale of development and the projected emissions;*
- *Quantify cumulative effects of new developments within AQMA; and*
- *Raise awareness of sustainable waste management practices.*

Progress undertaken on implementing the AQAP is reviewed annually and set out within the LBH's annual air quality reports.

4.4 National Legislation

4.4.1 National Planning Policy Framework, 2012

Published on 27 March 2012, the National Planning Policy Framework (NPPF)¹³ sets out the Government's planning policies for England and how these are expected to be applied.

The NPPF identifies 12 core planning principles that should underpin both plan-making and decision-taking, including a requirement for planning to 'contribute to conserving and enhancing the natural environment and reducing pollution'.

Under Policy 11: Conserving and Enhancing the Natural Environment the Framework requires the planning system to *"prevent both new and existing developments from contributing to or being put at unacceptable risk or being adversely affected by unacceptable levels of air pollution"*.

In dealing specifically with air quality the Framework states that *"planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan"*.

4.4.2 Air Quality Planning Practice Guidance

The online Planning Practice Guidance (PPG) was launched in March 2014 to support the NPPF. Paragraph 001, Reference 32-001-20 of the PPG provides a summary as to why air quality is a consideration for planning, stating that *"It is important that the potential impact of new development on air quality is taken into account in planning where the national assessment indicates that relevant limits have been exceeded or are near the limit"*.

Paragraph 005, of the PPG identifies when air quality could be relevant for a planning decision including when a development:

- *"Significantly affects traffic in the immediate vicinity of the proposed development site or further afield;*
- *Introduces new point sources of air pollution such as CHP or biomass boilers;*
- *Exposes people to existing sources of air pollutants such as through the introduction of new residential units;*
- *Gives rise to potentially unacceptable impacts (such as dust) during construction for nearby sensitive locations; and*
- *Affects biodiversity'.*
- The PPG also sets out guidance on the level of detail required for an assessment and on how significant impacts can be mitigated. These includes measures such as:

"the design and layout of development to increase separation distances from sources of air pollution;

¹³ Communities and Local Government (2012) National Planning Policy Framework

- *using green infrastructure, in particular trees, to absorb dust and other pollutants;*
- *promoting infrastructure to promote modes of transport with low impact on air quality;*
- *controlling dust and emissions from construction, operation and demolition; and*
- *contributing funding to measures, including those identified in air quality action plans and low emission strategies, designed to offset the impact on air quality arising from new development."*

Paragraph 009 of the PPG provides guidance on how considerations about air quality fit into the development management process by means of a flowchart. The final two stages in the process deal with the results of the assessment:

"Will the proposed development (including mitigation) lead to an unacceptable risk from air pollution, prevent sustained compliance with EU limit values or national objectives for pollutants or fail to comply with the requirements of the Habitats Regulations.' If Yes:

'Consider how the proposal could be amended to make it acceptable or, where not practicable, consider whether planning permission should be refused'.

The NPPF is supported by a series of Planning Practice Guidance. The Guidance in relation to air quality provides guiding principles on how planning can take account of the impact of new development on air quality.

The PPG sets out the information that may be required in an air quality assessment, making clear that "...assessments should be proportional to the nature and scale of development proposed and the level of concern about air quality." It also provides guidance on options for mitigating air quality impacts, as well as examples of the types of measures to be considered. It makes clear that "...mitigation options where necessary, will depend on the proposed development and should be proportionate to the likely impact."

4.4.3 Control of Dust and Particulates Associated with Construction

There are no dust nuisance criteria set within UK legislation or guidance; however, section 79 of the Environmental Protection Act (1990)¹⁴ states that where a statutory nuisance is shown to exist, the local authority must serve an abatement notice. Statutory nuisance is defined as:

- *"any dust or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance', and*
- *'any accumulation or deposit which is prejudicial to health or a nuisance'".*

Failure to comply with an abatement notice is an offence and if necessary, the local authority may abate the nuisance and recover expenses. In the context of the proposed development, the main potential for nuisance of this nature would arise during the construction phase - potential sources being the clearance, earthworks, construction and landscaping processes.

There are no statutory limit values for dust deposition above which 'nuisance' is deemed to exist - 'nuisance' is a subjective concept and its perception is highly dependent upon the existing conditions and the change which has occurred. However, research has been undertaken by a number of parties to determine community responses to such impacts and correlate these to dust deposition rates; however, impacts remain subjective and statutory limits have yet to be derived.

¹⁴ Secretary of State, The Environment Act 1990 HMSO

4.5 Regional Policy

4.5.1 The Mayor of London's Air Quality Strategy, 2010

The Mayor of London's AQS¹⁵ sets out a series of policies and proposals for the implementation of the UK AQS and for the achievement of the air quality standards and objectives in Greater London. With regards new developments the following policies are of relevance:

Policy '1 - Encouraging smarter choices and sustainable travel': The Mayor will support a shift to public transport, by only supporting developments that generate high levels of trips in locations with good public transport accessibility, by supporting car free developments and encouraging the inclusion of infrastructure to support sustainable travel, such as cycling, electric vehicle recharging points and car clubs;

Policy '6 - Reducing emissions from construction and demolition sites': The London Council's Best Practice guidance will be reviewed and updated, and more vigorously implemented;

Policy '7 - Using the planning process to improve air quality - new developments in London as a minimum shall be 'air quality neutral': The Mayor will encourage boroughs to require emissions assessments to be carried out alongside conventional air quality assessments. Where air quality impacts are predicted to arise from developments these will have to be offset by developer contributions and mitigation measures secured through planning conditions, section 106 agreements or the Community Infrastructure Levy;

4.5.2 London Plan, 2016

The London Plan 2016¹⁶ is the overall strategic plan for London setting out an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. It specifically addresses how development can help support the implementation of the Mayor's Air Quality Strategy and achieve a reduction in pollutant emissions and public exposure to pollution.

Policy '7.14 - Improving Air Quality' requires the following from all development proposals:

- *Minimise increased exposure to existing poor air quality, make provision to address local problems of air quality (particularly within AQMAs) and promote greater use of sustainable transport modes through travel plans;*
- *Promote sustainable design and construction to reduce emissions from demolition and construction of buildings including following current best practice guidance;*
- *Be at least 'air quality neutral' and therefore not leading to further deterioration of existing poor air quality; and*
- *Look, in the first instance, to implement measures on-site to reduce emissions from a development. If inappropriate or impractical, other measures should be considered and where found to provide equivalent air quality benefits, planning obligations or planning conditions should be used to ensure their implementation.*

4.5.3 Mayor of London Sustainable Design and Construction Supplementary Planning Guidance, 2014

The Mayor's Sustainable Design and Construction Supplementary Planning Guidance (SPG)¹⁷ sets out guidance on meeting the London Plan Policy on sustainable design and construction.

In relation to air quality the SPG sets out guidance on the following key areas:

¹⁵ Greater London Authority, 2010. Clearing the Air, The Mayors Air Quality Strategy.

¹⁶ Greater London Authority, 2016. The London Plan: The Spatial Development Strategy for London Consolidated with Alterations Since 2011

¹⁷ Greater London Authority, 2014. Sustainable Design and Construction Supplementary Planning Guidance, London Plan 2011 Implementation Framework

- Assessment requirements;
- Construction and demolition;
- Design and occupation;
- Air quality neutral policy for buildings and transport; and
- Emissions standards for combustion plant.

Reference has been made to the guidance set out within the SPG when undertaking this assessment.

4.6 Local Policy

4.6.1 London Borough of Hounslow Local Plan 2015 – 2030

The LBH Local Plan¹⁸ sets out the spatial strategy for the borough up to 2030.

Under policy CC2 – Urban Design and Architecture the plan required development proposals to *"be designed to mitigate air quality issues which significantly affect parts of the borough"*.

In dealing specifically with air quality the Plan sets out Policy EQ4 which states that the Council will *'seek to reduce the potential air quality impacts of development and promote improved air quality conditions across the borough in line with the Air Quality Action Plan'*. To achieve this the Council will expect development proposals to:

- *"Carry out air quality assessments where major developments or change of use to air quality sensitive uses are proposed, considering the potential impacts of air pollution from the development on the application site and neighbouring areas, and the potential for end users to be exposed to air pollution, consistent with requirement established in the Air Quality SPD, the London Plan and in government and European policy are met; and*
- *Incorporate mitigation measures where air quality assessments show that developments could cause or exacerbate air pollution or where end users could be exposed to air pollution"*.

4.6.2 Hounslow Air Quality Supplementary Planning Document, 2008

The LBH Air Quality Supplementary Planning Document (SPD)¹⁹ sets out guidance on assessing when an air quality assessment is required and sets out the assessment procedure to be followed when undertaking such assessments. The document also sets out appropriate mitigation measures for consideration including those for controlling emission during the construction phase, measures relating to the design of the development and details on measures required as part of planning obligations such as Travel Plans and Low Emission Strategies.

4.7 Additional Guidance

4.7.1 Environmental Protection UK and Institute of Air Quality Management Guidance

EPUK together with the IAQM has produced guidance²⁰ on how air quality impacts should be assessed within the land-use planning and development control process. This guidance provides clear criteria to determine when a detailed air quality assessment is required and a methodology for assessing the significance of air quality effects.

4.7.2 Mayor of London Construction and Demolition Supplementary Planning Guidance, 2014

The Mayor's Construction and Demolition SPG²¹ sets out the methodology for assessing the risk of significant effects from dust emissions arising during construction and demolition activities.

¹⁸ London Borough of Hounslow, 2015. Local Plan 2015-2030

¹⁹ London Borough of Hounslow, 2008. Air Quality Supplementary Planning Document to the Hounslow Local Development Framework

²⁰ EPUK & IAQM, 2015. Land-use Planning & Development Control: Planning for Air Quality

²¹ Greater London Authority, 2014. The Control of Dust and Emissions During Construction and Demolition, Supplementary Planning Guidance

Based on the identified risk the guidance sets out mitigation which should be applied at the application site to reduce potential emissions and avoid significant effects. The guidance draws on the guidance set out in the IAQM construction and demolition guidance.

4.7.3 Environmental Permitting Regulations, 2010

Under the Environmental Permitting (England and Wales) Regulations 2010 certain industrial activities and businesses require an environmental permit before they can operate²². Regulated activities include those which recover waste. As a waste handling operation the permit is issued and regulated by the Environment Agency. The existing Quattro facility operates under such a permit and it is anticipated that this would be transferred to the new operation in Southall. The permit sets out the permitted activities, the types of waste that can be handled and also a number of operating conditions that the facility must adhere to prevent significant emissions of dust, including the implementation of a dust suppression plan.

²² Secretary of State, 2010. The Environmental Permitting (England and Wales) (Amendment) Regulations 2010, Statutory Instruments 2010 No 676

5. ASSESSMENT METHODOLOGY

5.1 Introduction

The assessment has been carried out according to the latest relevant guidance produced by EPUK, IAQM and the Mayor of London and has been detailed in the various sections below.

5.1 Baseline

In order to establish the existing baseline air quality in the vicinity of the application site, relevant monitoring data was reviewed and assessed. Data was obtained from the following sources:

- Local monitoring data and relevant Local Authority Review and Assessment reports;
- London-Air website;
- UK-Air website; and
- Defra air quality background maps.

5.2 Construction Impacts

The assessment of potential construction impacts follows the SPG published by the Mayor of London on the assessment of the impacts of construction on air quality. The assessment methodology considers three separate dust effects and defines their significance according to the sensitivity of the surrounding area, as follows:

- Annoyance due to dust soiling;
- The risk of health effects due to significant increase in PM₁₀; and
- Harm to ecological receptors.

The assessment was therefore carried out in a number of steps:

- Step 1, the need for a construction assessment was screened, based on the proximity of receptors;
- Step 2, the risk of dust impacts was assessed taking into account the level of activity and the proximity of sensitive receptors;
- Step 3, site specific mitigation integral to the development proposals was reviewed and supplemented where necessary; and
- Step 4, the significance of the dust effects, after applying the application site-specific mitigation, was assessed.

Full details of the assessment methodology are provided in Technical Appendix 1.

5.3 Operational Dust Emissions

The potential for dust impacts during operation of the application site has been assessed qualitatively through a review of site operations compared to the best available techniques set out within Defra process guidance note 3/01(12)²³ and taking into account local meteorological conditions and separation distances between the application site and sensitive receptors. The risk of significant impact has subsequently been assessed drawing on the methodology set out within the Mayor of London's Construction and Demolition SPG.

²³ Department for Environment, Food and Rural Affairs (Defra), 2012. Process Guidance Note 3/01/(12) Statutory Guidance for blending, packing, loading, unloading and use of cement

5.4 Operational Traffic Impacts

5.4.1 Introduction

Potential impacts on air quality due to local traffic emissions have been predicted using the ADMS Roads dispersion model (version 4.0.1.0, released December 2015). This is a commercially available dispersion model and has been widely validated for this type of assessment and used extensively in the Air Quality Review and Assessment process.

The model uses detailed information regarding traffic flows on the local road network and local meteorological conditions to predict pollution concentrations at specific locations selected by the user. Meteorological data from Heathrow Meteorological Station for 2015 has been used for the assessment.

Quantitative assessment of the impacts on local air quality from road traffic emissions associated with the operation of the development have been completed against the current statutory standards and objectives set out in Table 4.1 for NO₂, PM₁₀ and PM_{2.5}.

5.4.2 Emissions Data

The model uses traffic flow data and vehicle related emission factors to predict road specific concentrations of NO_x, PM₁₀ and PM_{2.5} at sensitive receptors selected by the user. The predicted concentrations of NO_x have been converted to NO₂ using the LAQM calculator (version 5.1) available on the Defra air quality website (<http://uk-air.defra.gov.uk>).

The assessment has predicted air quality during 2015 for verification. The model has predicted the impact of the development in 2018 (to ensure consistency with the Transport Assessment and to account for the year of opening). The emission factors released by Defra in July 2016, provided in the emissions factor toolkit (EFT) EFT2016_v7.0 have been used to predict existing and future PM₁₀ and PM_{2.5} emissions. These are the latest emission factors available.

Emission factors and background data used in the prediction of future air quality concentrations predict a gradual decline in pollution levels over time due to improved emissions from new vehicles and the gradual renewal of the vehicle fleet. However, recent monitoring carried out in urban areas throughout the UK have found that NO₂ concentrations are not declining as rapidly as previously thought and in some locations concentrations have increased. It is thought that this discrepancy is related to the on-road performance of modern diesel vehicles. Although the emission factors released in the latest EFT go some way towards addressing the disparity it does not fully tackle the discrepancy.

Air Quality Consultants Ltd (AQC) has recently undertaken research comparing the Computer Programme to Calculate Emissions from Road Transport (COPERT) emissions data within the EFT against on-road emissions from diesel vehicles for the different EURO categories for both LDV and HDV vehicles²⁴. The research concluded that there was very little difference in emissions emitted by the different vehicle categories prior to Euro 6 during on-road driving cycles compared to the emissions set out in COPERT. Furthermore, although there has been a significant improvement in emissions from Euro 6 vehicles compared to Euro 5, the emissions are still higher on-road than those within the EFT. To address this discrepancy AQC have developed the CURED spreadsheet which provides more realistic NO_x emission factors by taking account of actual on-road emissions.

The findings of the AQC research have been further validated by the Department for Transport's (DfT) recently published (21st April 2016) results of its new Vehicle Emissions Testing Programme²⁵. The DfT test showed that real-world emissions are well above the levels set in the

²⁴ Air Quality Consultants, mission of Nitrogen Oxides from Modern Diesel Vehicles, January 2016

²⁵ Department for Transport, Vehicle Emissions Testing programme Moving Britain Ahead, April 2016

emissions standards. On average Euro 5 and Euro 6 vehicles were found to emit just over 6 times their respective standards.

The modelling assessment has used the 2015 and 2018 CURED emission factors within the modelling assessment to predict emissions of NO_x.

The ADMS model cannot predict short-term concentrations of NO₂ or PM₁₀. However, the following approach has been set out by Defra in LAQM.TG(16) to calculate the number of exceedences of 50 µg/m³ as a 24-hour mean PM₁₀:

- $A = -18.5 + 0.00145 \times \text{annual mean}^3 + (206/\text{annual mean})$
- where A is the number of exceedences of 50 µg/m³ as a 24-hour mean PM₁₀ concentration.
- LAQM.TG(16) does not provide a method for the conversion of annual mean NO₂ concentrations to 1-hour mean NO₂ concentrations. However, research has concluded that exceedences of the 1-hour mean objective are generally unlikely to occur where annual mean concentrations do not exceed 60 µg/m³. This approach has been taken within this assessment.

5.4.3 Scenarios

In carrying out the assessment of operational impacts the following scenarios have been assessed:

- 2015 Existing baseline for model verification only;
- 2018 baseline;
- 2018 baseline plus adjacent HWD; and
- 2018 baseline, HWD and proposed development.

Annual mean concentrations of NO₂, PM₁₀ and PM_{2.5} have been estimated at a number of receptors as shown in Figure 5.1. Full details of the receptor locations are provided in Table 5.1. The receptors represent sensitive locations adjacent to the surrounding road network and have been selected to represent worst-case exposure to traffic emissions.

Table 5.1: Receptor Locations used in Modelling		
Receptor Number	Receptor Location	OS Grid Reference
1	124 North Hyde Road	510063, 178917
2	168 North Hyde Road	510220, 178880
3	5 Wentworth Road	511303, 178790
4	31 The Common	511369, 178836
5	316A Western Road	511372, 178865
6	215 High Street	510871, 177784
7	191 High Street	510832, 177643
8	Cranford College	510780, 177658
9	146 High Street	510794, 177533

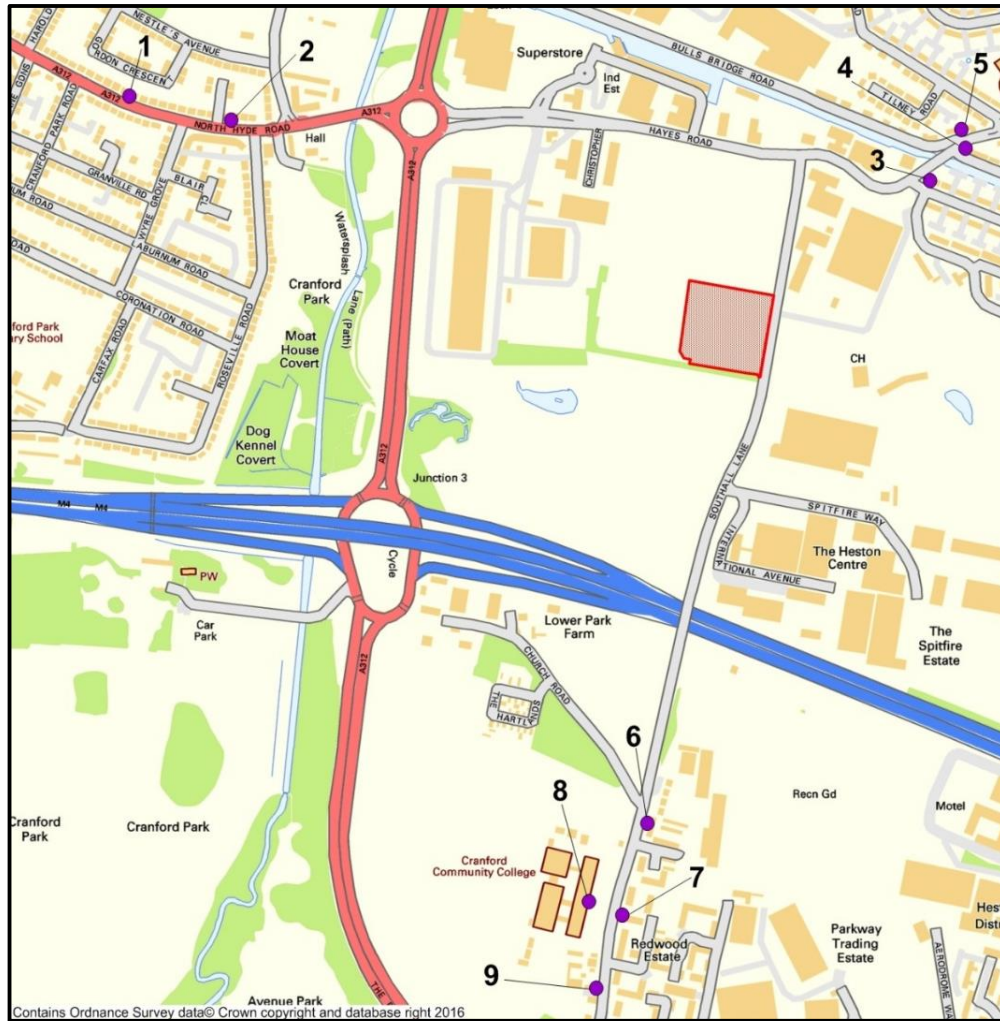


Figure 5.1: Receptor Locations

5.4.4 Traffic Data

Traffic data for use in the ADMS model has been provided by the Applicant's transport consultants I-Transport. A traffic survey (TS) was undertaken in 2016 which provides base traffic flows for the adjacent road network. The 2016 base flows have been used for the 2015 baseline assessment scenario.

The 2016 base flows have been factored forward to 2018 and flows associated with the HWD and proposed development added to provide the future year assessment scenarios.

The traffic data used within this assessment are provided in Appendix 2.

5.4.5 Background Concentrations

The ADMS model estimates concentrations arising as a result of vehicle emissions. It is necessary to add an estimate of local background concentrations to obtain the total concentration for comparison against the air quality objectives.

Background NO₂ and PM₁₀ concentrations have been obtained from the automatic monitoring site located at Cranford and operated by LBH. The application site does not monitor concentrations of PM_{2.5} therefore background concentrations for this pollutant have been taken from the Defra 2013 background maps.

The 2015 background concentrations used for the verification assessment have also been used for the 2018 assessment scenarios assuming no change in concentrations between the two years. This is considered to represent a worst-case prediction of future concentrations.

Background concentrations of NO₂, PM₁₀ and PM_{2.5} used in the modelling assessment are set out in Tables 5.2.

Table 5.2: Annual Man Background Concentrations used in Modelling Assessment	
Pollutant	2015
NO ₂	30.0
PM ₁₀	17.0
PM _{2.5}	13.1

5.4.6 Roads Modelling Verification

Best practice recommends that the model results are compared with measured data to determine whether the model results need adjusting to more accurately reflect local air quality. This process is known as verification.

LAQM.TG(16) recommends that model predictions should be within 25% (preferably 10%) of monitored concentrations for the model to be predicting within an acceptable degree of accuracy. Also, the guidance recommends that any adjustment factors applied to model results should be calculated based on verification using monitoring sites in a similar location i.e. roadside, intermediate or background sites.

The model has been run to predict NO₂ concentrations at the Hounslow monitoring site located on Southall Road and at the Hillingdon monitoring site located on North Hayes Road. The verification process has found that the model is under predicting annual mean NO₂ concentrations at both monitoring locations. It is therefore considered appropriate to adjust the model results to better represent local concentrations. The results of the modelling assessment have been adjusted using the methodology given in LAQM.TG(16). Full details of the verification and calculation of adjustment factors are provided in Appendix 3.

PM₁₀ concentrations are also monitored at the Hillingdon site on North Hayes Road. This site has been used to verify predicted PM₁₀ results with the resulting adjustment factor applied to predicted concentrations. Details of the PM₁₀ verification are also set out in Appendix 3.

There is no suitable monitoring of PM_{2.5} data to allow verification of the PM_{2.5} model results. In the absence of suitable data, and following best practice, the adjustment applied to predicted PM₁₀ concentrations has also been applied to the modelled PM_{2.5} concentrations.

5.4.7 Significance Criteria

The guidance issued by EPUK & IAQM relates to Air Quality considerations within the planning process and sets criterion which identify the need for an Air Quality Assessment, the type of Air Quality assessment required, and the significance of any predicted impact.

The guidance suggests expressing the magnitude of incremental change in concentrations as a proportion of an Air Quality Assessment Level (AQAL) such as the air quality objectives set out in Table 5.3.

The significance of impact at identified receptors is then identified based on the incremental change in the context of the new total concentrations and its relationship with the assessment criteria, noting whether the impact is adverse or beneficial based on a positive or negative change in concentrations. The criteria suggested for assigning significance is set out in Table 5.2.

The guidance states that overall significance should be based on professional judgement and "will need to take into account such factors as:

- The existing and future air quality in the absence of the development;
- The extent of current and future population exposure to the impacts; and
- The influence and validity of any assumptions adopted when undertaking the prediction of impacts."

Table 5.3: Impact Descriptors for Individual Receptors

Long-term Average Concentration at Receptor in Assessment Year	% Change in Concentrations Relative to Air Quality Assessment Level (AQAL)			
	1	2-5	6-10	>10
75% or less of AQAL	Negligible	Negligible	Minor	Moderate
76-94% of AQAL	Negligible	Minor	Moderate	Moderate
95-102% of AQAL	Minor	Moderate	Moderate	Major
103-109% of AQAL	Moderate	Moderate	Major	Major
110% of AQAL	Moderate	Major	Major	Major

AQAL - Air Quality Assessment Level which in this assessment refers to the Air Quality Objectives set out in Table 3.1

The percentage change in concentration should be rounded to a whole number

The table should only be used with annual mean concentrations

The descriptors are for individual receptors only: overall significance should be based on professional judgment

When defining the concentrations as a percentage of the AQAL use the 'without scheme' concentration where there is a decrease in pollutant concentrations and the 'with scheme' concentrations for an increase

The total concentration categories reflect the degree of potential harm by reference to the AQAL value. At exposure less than 75% of this value i.e. well below, the degree of harm is likely to be small. As exposure approaches and exceeds the AQAL, the degree of harm increases. This change naturally becomes more important when the result is an exposure that is approximately equal to, or greater than the AQAL

It is unwise to ascribe too much accuracy to incremental changes or background concentrations, and this is especially important when total concentrations are close to the AQAL. For a given year, it is impossible to define the new total concentrations without recognising the inherent uncertainty, which is why there is a category that has a range around the AQAL, rather than being exactly equal to it.

6. BASELINE ASSESSMENT

6.1 Automatic Monitoring

LBH operates seven automatic monitoring sites within the borough. One of these sites is located at Cranford, approximately 1.4 km south-west of the application site. The application site monitors NO₂ concentrations using a chemiluminescent gas analyser and PM₁₀ concentrations using a TEOM. The London Borough of Hillingdon (LBH) also operate a roadside automatic monitoring site adjacent to North Hayes Road, approximately 0.7 km to the north-west which monitors concentrations of NO₂ using a chemiluminescent gas analyser and PM₁₀ using a BAM analyser.

Details of the application sites are provided in Table 6.1. NO₂ and PM₁₀ concentrations recorded since 2009 are provided in Tables 6.2 and Table 6.3.

Table 6.1: Monitoring in Proximity to Proposed Development				
Site	Distance to Kerb	Classification	OS Grid	Distance from Proposed Development
HS2 Cranford	70 m	Background	510370, 177195	1.4 km
HIL5 Hillingdon Hayes	1 m	Roadside	510303, 178882	0.7 km

Table 6.2: Recorded NO₂ Data at Automatic Monitoring Locations							
Site	Objective	Monitoring Year					
		2010	2011	2012	2013	2014	2015
HS2	Annual Mean	27.0	28.0	31.0	31.0	31.4	30.0
	No. Exceedences of 1-hour Objective	0 (86)	0	0 (107)	0 (113)	0	-
HIL5	Annual Mean	54.3	55.3	45.9	47.0	52.9	46.2
	No. Exceedences of 1-hour Objective	15	15	2	4	2	2
* Where data capture was less than 90% the 99.8 th percentile of 1-hour means is provided in brackets							

Monitoring of NO₂ shows a consistent exceedence of the annual mean objective at the roadside along North Hayes Road, although the monitoring data set out in Table 6.2 shows a general gradual decline in concentrations since 2010.

The data for site HS2 indicates annual mean concentrations to be below the objective limit at background locations. The data shows a slight increase in concentrations at background locations since 2010.

Exceedences of the 1-hour objective was recorded at the HIL5 roadside site during each monitoring year presented, however the objective allows for up to 18 exceedences of the 200 µg/m³ limit in any given year therefore the objective was met in all six monitoring years presented. The data for HS2 indicates compliance with the 1-hour objective consistently over the six year with no exceedences of the limit recorded.

Table 6.3: Recorded PM₁₀ Data at Automatic Monitoring Locations

Site	Objective	Monitoring Year					
		2010	2011	2012	2013	2014	2015
HS2	Annual Mean	21.0	20.0	18.0	19.0	18.1	17.0
	No. Exceedences of 24-hour Objective	1 (34)	1 (29)	15 (39)	1 (19)	5	-
HIL5	Annual Mean	23.5	25.0	25.4	29.4	34.5	28.0
	No. Exceedences of 24-hour Objective	7	18	15.(47)	17 (46)	45 (60)	14
* Where data capture was less than 90% the 90 th percentile of 24-hour means is provided in brackets							

Monitoring of PM₁₀ shows concentrations at less than 75% of the annual mean objective at both roadside and background locations in the vicinity of the application site. In contrast to the NO₂ data monitoring indicates a decline in annual mean PM₁₀ concentrations at background locations but an increase at roadside locations since 2010.

The 24-hour objective allows for up to 35 exceedences of the 50 µg/m³ objective in any given year. On this basis the objective has been met at the HS2 background site since 2010 however the objective was exceeded at the HIL5 roadside site in 2014, although short-term concentrations decline back to below the objective in 2015.

No monitoring of PM_{2.5} is carried out within the borough; however based on professional experience and given that PM₁₀ concentrations are considerably below the annual mean objective it is expected that PM_{2.5} concentrations are meeting the annual mean objective of 25 µg/m³ within the borough.

6.2 Non-Automatic Monitoring

NO₂ is measured using diffusion tubes extensively throughout the borough. The closest to the application site is located adjacent to Southall Road. There are also a number of diffusion tubes operated by the LBH and the London Borough of Ealing (LBE) in the area. Those of relevance to this assessment are set out in Table 6.4. The location of each monitoring site is shown in Figure 6.1.

Diffusion tubes are a passive form of monitoring, which, due to their relative in-expense, allow for a much greater spatial coverage than with automatic monitoring sites. Diffusion tubes are acknowledged as a less accurate method of monitoring ambient air pollutants than automatic monitors, with diffusion tubes over or under estimating concentrations by as much as 30 %.

To allow the results to be reliably compared with the AQ Objectives, the data should be bias corrected using data collected from tubes co-located with continuous monitoring sites. The data provided below has been adjusted by the relevant local authorities.

The data presented in Table 6.4 shows exceedences of the annual mean objective adjacent to Southall Road. It is understood from the LBH that this section of Southall Road experiences congestion during peak periods and traffic flows are considerably constrained due to the signalised junction with The Parkway. This results in slow moving and queuing traffic and elevated emissions causing an exceedence of the objective limit.

Exceedence of the objective has also been recorded at the monitoring sites adjacent to Bath Road (HS55 and HS86) and King Street (EA17). Bath Road and The Parkway experience very high traffic volumes which is likely to be contributing to elevated NO_x emissions. EA17 is located in a

It is not possible to monitor short-term NO₂ concentrations using diffusion tubes; however, as discussed previously, research has concluded that exceedences of the 1-hour mean objective are generally unlikely to occur where annual mean concentrations are below 60 µg/m³. Based on the monitoring data presented in Table 6.4 it is unlikely that the 1-hour objective is being exceeded at any of the monitoring locations.

Site ID	Location	Site Type	2010	2011	2012	2013	2014	2015
HS54	Southall Lane	R	49.4	44.5	45.5	42.8	48.6	48.4
HS55	Bath Road	R	51.7	40.4	43.8	45.1	49.6	44.5
HS86	Bath Road/The Parkway	R	42.0	51.5	48.0	49.5	54.2	50.8
CRAN	Cranford background adjacent to M4	B	30.4	28.1	28.2	28.1	29.7	26.8
HD56	Phelps Way	R	37.3	36.0	37.0	35.5	35.4	31.4
EA17	55 King Street	R	-	63.3	56.3	47.3	47.9	-
EA18	18 Western Road	R	-	38.6	41.9	36.4	36.3	-
EA19	22 Bulls Bridge Road	B	-	-	-	34.5	35.3	-
EA20	150 Brent Road	R	-	42.8	41.0	37.6	39.5	-

R – Roadside
B - Background

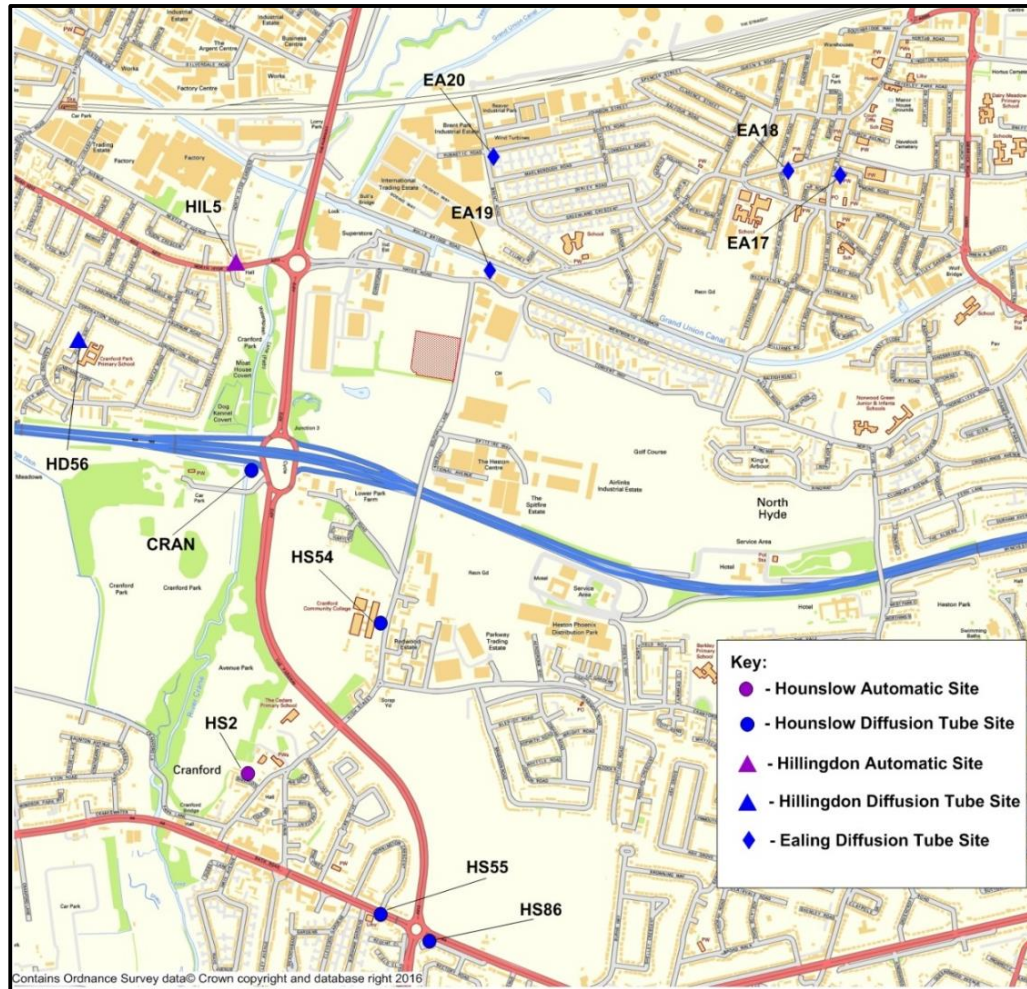


Figure 6.1: Location of Monitoring Sites

6.3 Defra background Maps

Additional information on estimated background pollutant concentrations has been obtained from the Defra background maps provided on UK-AIR. Estimated air pollution concentrations for NO₂, NO_x, PM₁₀ and PM_{2.5} have been extracted from the 2013 background pollution maps for the UK and are set out in Table 6.5. These maps are available in 1 km x 1 km grid squares. Average concentrations have been taken from the grid squares 511500, 178500 and 510500, 177500 which includes the application site and surrounding area.

The PM₁₀, PM_{2.5} and NO_x background maps are provided not only as total concentrations but are also broken down into sector contributions (i.e. primary A roads and brake tyre); however, as this assessment is considering the impact of the proposed development on existing air quality, background concentrations from all sources should be considered. Therefore data presented in Table 6.5 provides total background concentrations for all three pollutants.

The data indicates that background concentrations of NO₂, PM₁₀ and PM_{2.5} in the vicinity of the application site are comfortably below the annual mean objectives.

Table 6.5: Annual Man Background Concentrations from Defra Background Maps		
Pollutant	2015	2018
NO _x	45.6	39.7
NO ₂	28.3	25.2
PM ₁₀	18.0	17.4

Table 6.5: Annual Mean Background Concentrations from Defra Background Maps		
Pollutant	2015	2018
PM _{2.5}	13.1	12.5

6.4 Air Quality at Application Site

The application site is located to the south of Hayes Road. The nearest monitoring site is EA19 which lies to the north of Hayes Road. Monitoring in this location has recorded concentrations below the annual mean NO₂ objective in 2013 and 2014; however, the monitoring site located adjacent to Southall Lane has recorded concentrations above the objective consistently since 2010.

As previously discussed, traffic travelling along Southall Lane adjacent to monitoring site HS54 is congested. Adjacent to the application site traffic flows more freely. It is therefore expected that monitoring site EA19 is more representative of conditions adjacent to the application site. NO₂ concentrations are therefore expected to meet the annual mean and 1-hour objectives in this location.

Based on local monitoring data PM₁₀ concentrations are also expected to meet the annual mean and 24-hour objectives at the application site.

No monitoring of PM_{2.5} is carried out within the LBH; however, the Council has not identified any locations where the objective is likely to be exceeded. Furthermore, PM_{2.5} is a component of PM₁₀ and as PM₁₀ concentrations are comfortably meeting the annual mean objective it is expected that PM_{2.5} concentrations are also meeting the relevant objective limit throughout the LBH, including at the application site.

7. CONSTRUCTION STAGE

7.1 Potential Impacts

A summary of the proposed development is provided in Section 3 of this report.

Surrounding land-uses are mainly commercial and industrial uses which are considered to have a low sensitivity to dust emissions; however, there are residential receptors located within 350 m of the application site therefore an assessment of construction related impacts in relation to human receptors is required.

Dust emissions from construction activities are unlikely to result in significant impacts on ecologically sensitive receptors beyond 50 m from the application site boundary. There is an area of Metropolitan Open Land (MOL) immediately to the south of the site, however the closest ecological feature is some 280 m from the site. Additionally, a review of data held on the Defra MAGIC website²⁶ shows no sites designated as important for wildlife within 50 m of the application site therefore impacts on ecological receptors has not been considered any further within this assessment.

As discussed in Section 6, PM₁₀ concentrations, in the vicinity of the application site are expected to be less than 75% of the annual mean objective. Based on monitoring carried out on North Hayes Road concentrations in the vicinity of the application site are expected to be in the region of 28 µg/m³ as a worst-case.

The precise behaviour of the dust, its residence time in the atmosphere, and the distance it may travel before being deposited would depend upon a number of factors. These include wind direction and strength, local topography and the presence of intervening structures (buildings, etc.) that may intercept dust before it reaches sensitive locations. Furthermore, dust would be naturally suppressed by rainfall.

A windrose from the Heathrow Meteorological Station is provided in Figure 7.1, which shows that prevailing wind is from the south-west. Areas most consistently affected by dust are those located downwind of the prevailing winds. In this instance, this would be receptors located to the north-east. Land-uses immediately to the north-east are commercial and industrial premises; however, as detailed in Table 2.1 there are residential receptors located approximately 250 m to the north-east. The commercial/industrial premise would act as screens reducing dispersion of dust emissions towards the residential properties.

²⁶ <http://magic.defra.gov.uk/>

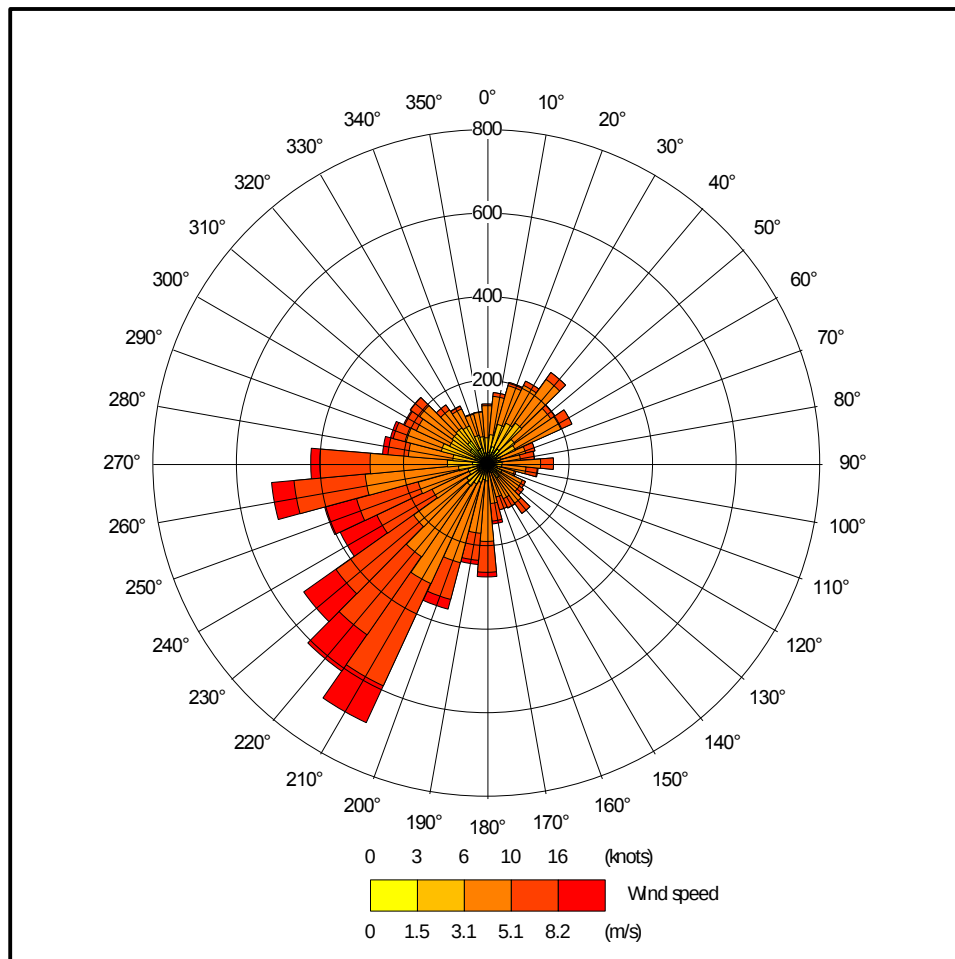


Figure 7.1: Windrose for Heathrow 2015

7.2 Risk Assessment of Dust Effects

7.2.1 Defining the Dust Emission Magnitude

With reference to the criteria detailed in Appendix 1, the dust emission magnitude for each of the categories demolition, earthworks, construction and trackout have been determined. These have summarised in Table 7.1.

Table 7.1: Dust Emission Magnitudes		
Activity	Criteria	Dust Emission Magnitude
Demolition	Not applicable – no demolition will be taking place on-site	
Earthworks	Building site area >17,000 m ² , expected 4-5 HDV on site, earth bunds <8 m but soil type is clay (prone to suspension)	Medium
Construction	Building volume < 25,000 m ³ , mix of construction materials, some of which potentially dusty	Medium
Trackout	Between 10-15 HDV (>3.5t) per day	Medium

7.2.2 Sensitivity of Surrounding Area

Using the criteria set out in Appendix 1, the sensitivity of the surrounding area to impacts from dust emissions has been determined and are summarised in Table 7.2.

Dust Soiling

The closest residential properties to the application site are located to the north-east approximately 250 m from the application site boundary. Commercial and industrial uses are considered to have a low sensitivity to dust emissions therefore given the separation distances between the application site and high sensitivity receptors the overall sensitivity of the area is considered to be low.

There will be between 10-15 HDV (>3.5t) movements per day during the construction stage which would travel to and from the application site along Southall Lane. As a general guide, significant impacts from trackout may occur up to 500 m from large sites, 250 m from medium sites and 50 m from small sites, as measured from the application site exit. There are no sensitive receptors (residential properties) located along Southall Lane within 250 m of the application site access point. The sensitivity of the area to dust soiling effects from trackout is therefore considered to be low.

PM₁₀ Impacts

As previously discussed, annual mean PM₁₀ concentrations in the vicinity of the application site are expected to be in the region of 28 µg/m³. Based on the proximity of sensitive receptors to the application site boundary and the local concentrations of PM₁₀, the sensitivity of the surrounding area is considered to be low with regard to human health impacts.

Table 7.2: Sensitivity of Receptors		
Potential Impact		Sensitivity at Site
Dust Soiling (earthworks and construction)	Receptor Sensitivity	High
	Number of receptors	10-100 within 100-300 m
	Sensitivity of the area	Low
Dust Soiling (trackout)	Receptor Sensitivity	No sensitive receptors
	Number of receptors	None adjacent to Southall Lane
	Sensitivity of the area	Low
Human Health PM ₁₀ (earthworks and construction)	Receptor Sensitivity	High
	Annual mean PM ₁₀ concentration	24 - 28 µg/m ³
	Number of receptors	10-100 within 100-300 m
	Sensitivity of the area	Low
Human Health PM ₁₀ (trackout)	Receptor Sensitivity	No sensitive receptors
	Annual mean PM ₁₀ concentration	24 - 28 µg/m ³
	Number of receptors	None adjacent to Southall Lane
	Sensitivity of the area	Low

7.2.3 Defining the Risk of Impacts

The dust emission magnitude as set out in Table 7.1 is combined with the sensitivity of the area in Table 7.2 to determine the risk of both dust soiling and human health impacts, assuming no mitigation measures applied at the application site. The risk of impacts associated with each activity is provided in Table 7.3 and has been used to identify site-specific mitigation measures, which are discussed in Section 7.3.

Table 7.3: Summary of Effects Without Mitigation		
Source	Dust Soiling	PM₁₀ Effect
Demolition	N/A	N/A
Earthworks	Low	Low
Construction	Low	Low
Trackout	Low	Low

7.3 Mitigation

The control of dust emissions from construction activities relies upon management provisions and mitigation techniques to reduce emissions of dust and limit dispersion. Where dust emission controls have been used effectively, large-scale operations have been successfully undertaken without impacts to nearby properties.

A low risk of impacts is predicted at adjacent receptors during construction of the proposed development. The developer would therefore implement appropriate dust and pollution control measures as set out within the Mayors SPG. The following measures would be implemented through a Dust Management Plan (DMP) which would be agreed with the LBH prior to construction:

- Display the name and contact details of person accountable for air pollution emissions and dust issues at application site boundary;
- Display head or regional office contact information;
- Record and respond to all dust and air quality complaints;
- Make a complaints log available to the LBH when asked;
- Carry out regular site inspections to monitor compliance with the DMP, record inspection results and make inspection log available to LBH when asked;
- Increase frequency of site inspection by the person accountable for air quality and dust issues on-site when activities with a high potential to produce dust are being carried out and during prolonged periods of dry or windy conditions;
- Record any exceptional incidents that cause dust and air quality pollutant emissions, either on or off site and the action taken to resolve the situation;
- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
- Erect solid screens or barriers around dusty activities or the application site boundary that are at least as high as any stockpiles;
- Avoid site runoff of water or mud;
- Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone;
- Ensure all non-road mobile machinery comply with the standard set within the Sustainable Design and Construction SPG;
- Ensure all vehicles switch off engines when stationary - no idling vehicles;

- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable;
- implement a Travel Plan that supports and encourages sustainable travel;
- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction e.g. suitable local exhaust ventilation systems;
- Ensure an adequate water supply on-site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate;
- Use enclosed chutes and conveyors and covered skips;
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate;
- Reuse and recycle waste to reduce dust from waste materials; and
- Avoid bonfires and burning of waste materials.

In addition, the following measures would also be considered and would assist in reducing emissions further:

- Fully enclose site or specific operations where there is a high potential for dust production and the activities are being undertaken for an extensive period;
- Keep site fencing, barriers and scaffolding clean using wet methods;
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If being re-used on site, cover as detailed below;
- Impose and signpost a maximum-speed-limit of 10 mph on surfaced haul roads and work areas;
- Avoid scabbling (roughening of concrete surfaces) if possible;
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place;
- Regularly use water-assisted dust sweepers on the access and local roads, to remove, as necessary, any material tracked out of the application site;
- Avoid dry sweeping of large areas;
- Ensure vehicles entering and leaving the application site are covered to prevent the escape of materials during transport; and
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud).

8. OPERATIONAL STAGE

8.1 Dust Emissions

8.1.1 Mitigation by Design

As described in Section 3, waste material from off-site demolition and construction sites would be delivered to the application site and stored in a central stockpile of up to 6 m (item 2, Figure 3.1). From here the waste would be sorted into individual waste streams and loaded onto conveyor belts for further sorting within the picking stations.

All waste delivered to the application site would arrive in sheeted HDVs to prevent wind-whipping and dispersion of particles during transit. The majority of waste would be of mixed source including wood, plastics, metals and aggregate. Wood, plastics and metals would not give rise to significant dust emissions and aggregate is primarily made up of large grains which are not generally susceptible to suspension in air. However, there would be some smaller dust particles within the waste and there is a risk of emissions to air due to wind-whipping, although this would be limited to during unloading, storage and sorting of the material. In the event that the waste is seen to result in visible emissions of dust, dust busters and water bowsers would be used to dampen down the material during storage and sorting.

Once sorted the waste material would be stored in storage bays (item 4, Figure 3.1) on the western boundary of the application site. These would be 3-sided with the sides being higher than the maximum stored aggregate piles (5 m) to prevent wind-whipping of small particles. This is in line with best practice techniques as set out within the Defra 3/01(12) guidance note.

The rear walls of the storage bays would also be located downwind of the prevailing wind so would protect the storage piles from prevailing winds reducing the risk of suspension of dust.

Any waste that cannot be re-used within the CBP or for the production of sand and shingle would be removed from site to landfill. This waste is unlikely to generate dust.

The aggregate extracted from the C&D waste would be loaded into a crusher by a front-end loader where it would be crushed and washed within an enclosed crushing machine to prevent emissions to air.

Cement for use in the CBP would be delivered via large HDV and discharged by a sealed, pressurised pipe system into sealed cement silos, generating minimal dust emissions. The silos would be fitted with dust filters and high-level pressure sensor alarms which would be linked to automatic shut-off valves on the fill pipe. This is consistent with the best practice measures outlined within the Defra guidance note.

All cement and aggregate for use within the CBP would be transferred to the plant via enclosed conveyors where they are mixed with water to form concrete and dropped into mixing trucks in the loading point ready for distribution. The loading and mixing processes would be computer controlled and would occur within enclosed areas reducing the risk of dust emissions. These techniques are consistent with the Defra guidance note.

The resulting concrete is a wet material and therefore would not generate dust.

The entire site would be laid to hardstanding with the exception of the eastern embankment that would be retained and managed for landscaping purposes. Water sprays and hoses would be available at all times to dampen down stockpiles. The yard areas surrounding the C&D recycling facility and CBP would be hosed down on a daily basis. If required this would be undertaken on a more frequent basis i.e. during dry and windy conditions, to reduce the risk of trackout from the proposed development and the resuspension of dust from vehicle movements within the proposed development. A road-sweeper would also be available and used on a regular basis to

remove dusty material that could be tracked out onto the access road, although given the low level of dust that would be generated at the proposed development there is unlikely to be a significant amount of material occurring on the access road.

It is considered that the measures outlined above would be sufficient to adequately control dust emissions to ensure they are kept to a minimum. These measures follow the best available techniques outlined in the Defra guidance note 3/01/12 and as a result it is expected that emissions would adhere to the particulate emission limits set out within the document, details of which are provided in Appendix 4.

However, even with the implementation of best practice measures, it is considered that there would be some residual risk of dust emissions and therefore the risk of dust impacts has been considered below.

8.1.2 Risk of Dust Impacts

To assess the risk of dust impacts occurring the assessment methodology set out within the Mayor of London's Demolition and Construction SPG has been used. The use of this guidance is considered appropriate as the risk of operational dust impacts is broadly similar to that which would arise during the construction stage. As detailed in section 7.1 there are sensitive human receptors (residential properties) within 350 m of the application site boundary, therefore more detailed consideration of the potential for impacts at these receptors is required.

Following the methodology set out within the SPG the first step in the assessment is to define the dust magnitude for the proposed development. As detailed above, the proposed development would be designed to incorporate the best available techniques for controlling dust emissions and would ensure that those processes which do not occur in screened or covered/enclosed areas are damped down to reduce the risk of dust resuspension from wind-whipping. On this basis and in comparison to a typical construction and demolition site, the dust emission magnitude is considered to be 'small'.

The second step is to define the sensitivity of the area. As detailed in Table 6.2 there are potentially up to 100 residential properties within 350 m of the application site; however none of these are within 250 m of the application site therefore the sensitivity of the surrounding area to dust soiling effects is considered to be 'low'.

Given the distance of residential receptors from the application site and the existing annual mean PM₁₀ concentrations the area is also considered to have a 'low' sensitivity to human health effects.

The final step is to determine the risk of impact using the defined dust emission magnitude and area sensitivity. To ensure a conservative approach the criteria set out in Table 1.5, Appendix 1 for demolition has been used in the absence of actual criteria for screening and sorting of waste (demolition activities have the potential to create the most dust emissions). Based on the above information the risk of impacts is defined as 'negligible' in terms of both human health and dust soiling. It is therefore unlikely that the operational development will give rise to significant dust impacts at nearby sensitive receptors considering the abatement measures that would be implemented and the separation distances between source and receptor.

8.2 Traffic Impacts

8.2.1 NO₂ Concentrations

Annual mean NO₂ concentrations predicted at the selected receptor locations are presented in Table 8.1.

Table 8.1: Predicted Annual Mean NO₂ Concentrations (µg/m³)					
Receptor	2018 Base	2018 Base + HWD	2018 Base + HWD + Proposed Development	Change due to Proposed Development as a % of AQAL	Significance of Impact
1	43.6	43.6	43.9	1	Moderate Adverse
2	42.4	42.4	42.7	1	Moderate Adverse
3	46.0	46.1	46.2	0	Negligible
4	50.4	50.6	50.6	0	Negligible
5	41.7	41.8	41.8	0	Negligible
6	49.9	50.7	50.7	0	Negligible
7	49.0	49.7	49.7	0	Negligible
8	34.5	34.7	34.7	0	Negligible
9	41.9	42.4	42.4	0	Negligible

The modelling assessment has predicted annual mean NO₂ concentrations above the objective limit of 40 µg/m³ (AQAL) at all receptor locations with the exception of receptor 8, which represents Cranford College. At this location concentrations are predicted to be approximately 85% of the AQAL.

Traffic generated by the operational development is predicted to increase annual mean NO₂ concentrations by 0.3 µg/m³ at receptors 1 and 2, residential properties located on North Hayes Road. This equates to 1 % of the AQAL and based on criteria set out in Table 5.2 and given that concentrations would be between 103-109% of the AQAL this is classed as a moderate adverse impact. Although it should be noted that the change in NO₂ concentrations is small at 0.3 µg/m³, which only just equates to 1% of the AQAL. The impact is classed as moderate adverse due to high background levels in the area and existing concentrations currently exceeding the annual mean objective.

At all other locations the change in traffic would have a negligible impact on NO₂ concentrations. However, it should be noted that the existing facility located on Lionel Road, Brentford, would be relocated to the application site as part of the proposed development. Monitoring in the vicinity of Lionel Road and Brentford recorded annual mean NO₂ concentrations in the region of 52 – 74 µg/m³ during 2015 (sites HS68, HS67 and BREN), equivalent to over 110% of the AQAL and considerably higher than in the Southall area. The proposed development would therefore have a positive impact on air quality within Brentford area.

The predicted traffic generated from the proposed development is also based on the worst case assumption that all deliveries to the application site would be made in 7.5 tonne trucks to predict the maximum number of traffic movements which could be generated by the proposed development. However, in reality some deliveries would be in larger HDVs up to the size of 16 tonne grab lorries. The number of vehicles generated by the operational proposed development

would therefore be expected to be lower, therefore the impact on local NO₂ concentrations would be less than predicted.

8.2.2 PM₁₀ Concentrations

Annual mean PM₁₀ concentrations predicted at the selected receptor locations are presented in Table 8.2. The predicted number of days exceeding the 24-hour objective are set out in Table 8.3.

Table 8.2: Predicted Annual Mean PM₁₀ Concentrations (µg/m³)					
Receptor	2018 Base	2018 Base + HWD	2018 Base + HWD + Proposed Development	Change due to Proposed Development as a % of AQAL	Significance of Impact
1	28.7	28.7	28.9	0	Negligible
2	27.5	27.6	27.7	0	Negligible
3	31.3	31.4	31.5	0	Negligible
4	35.9	36.0	36.0	0	Negligible
5	27.2	27.2	27.3	0	Negligible
6	25.6	25.8	25.8	0	Negligible
7	25.1	25.3	25.3	0	Negligible
8	18.9	18.9	18.9	0	Negligible
9	21.9	22.0	22.0	0	Negligible

The ADMS model has predicted annual mean PM₁₀ concentrations below the AQAL of 40 µg/m³ at all nine receptor locations under all three assessment scenarios.

The ADMS model has predicted a maximum change in annual mean PM₁₀ concentrations of 0.2 µg/m³ as a result of traffic generated by the operational development. This equates to less than 1% of the AQAL and is classed as a negligible impact based on criteria set out in Table 5.2.

The maximum number of days >50 µg/m³ PM₁₀ has been predicted using the methodology set out in section 5.4.2. Based on the predicted annual mean concentrations the number of exceedences of the 24-hour objective is predicted to be between 2 and 55 at the selected receptors with a change of 1 day as a result of the operational development at receptors 1 and 2 and no change at the remaining seven receptors. The objective allows for up to 35 exceedences of the objective limit in any given year. At receptors 1 and 2 the number of days exceeding the objective limit would remain well below 35 therefore the impact on short-term PM₁₀ concentrations would also be negligible.

Table 8.3: Predicted Number of Days Exceeding the PM₁₀ 24-hour objective limit of 50 µg/m³

Receptor	2018 Base	2018 Base + HWD	2018 Base + HWD + Proposed Development	Change due to Proposed Development as a % of AQAL	Significance of Impact
1	23	23	24	0	Negligible
2	19	19	20	0	Negligible
3	33	33	33	0	Negligible
4	54	55	55	0	Negligible
5	18	18	18	0	Negligible
6	14	14	14	0	Negligible
7	13	13	13	0	Negligible
8	2	2	2	0	Negligible
9	6	6	6	0	Negligible

8.2.3 PM_{2.5} Concentrations

Annual mean PM_{2.5} concentrations predicted at the selected receptor locations are presented in Table 8.4.

Table 8.4: Predicted Annual Mean PM_{2.5} Concentrations (µg/m³)

Receptor	2018 Base	2018 Base + HWD	2018 Base + HWD + Proposed Development	Change due to Proposed Development as a % of AQAL	Significance of Impact
1	20.0	20.0	20.1	0	Negligible
2	19.3	19.3	19.4	0	Negligible
3	21.6	21.6	21.7	0	Negligible
4	24.3	24.3	24.4	0	Negligible
5	19.1	19.2	19.2	0	Negligible
6	18.4	18.6	18.6	0	Negligible
7	18.1	18.2	18.2	0	Negligible
8	14.3	14.3	14.3	0	Negligible
9	16.1	16.2	16.2	0	Negligible

The ADMS model has predicted annual mean PM_{2.5} concentrations below the AQAL of 25 µg/m³ at all nine receptor locations under all three assessment scenarios.

The ADMS model has predicted a maximum change in annual mean PM_{2.5} concentrations of 0.1 µg/m³ as a result of traffic generated by the operational development. This equates to less than 1% of the AQAL and is classed as a negligible impact based on criteria set out in Table 5.2.

8.3 Mitigation

Dust Emissions

As detailed above the application site has been designed in accordance with the best available techniques outlined in the Defra guidance note 3/01(12) to minimise and prevent dust emissions.

The risk assessment has concluded that the residual dust emissions are unlikely to result in significant effects at nearby sensitive receptors in terms of both dust soiling and human health. However, it is recommended that a DMP is produced setting out the measures that would be employed during operation of the application site to ensure dust emissions are kept to a minimum and measures that would be undertaken should dust complaints or significant emissions occur.

Traffic Impacts

The predicted change in traffic has been based on worst-case assumptions in respect of background air quality.

The assessment has predicted a moderate adverse impact at receptors located on North Hyde Road as a result of traffic generated by the operational development. However it should be noted that the change in NO₂ concentrations is small at 0.3 µg/m³, which equates to 1% of the AQAL. The impact is classed as moderate adverse due to high background levels in the area and existing concentrations currently exceeding the annual mean objective. Furthermore, at all other locations the impact would be negligible.

It is recommended that to reduce impacts on local air quality a Travel Plan is implemented aimed at reducing the number of vehicles generated during the operational phase through encouraging the use of more sustainable transport modes by site staff and looking at ways to reduce HDV trips to and from the application site. The requirement to produce a Travel Plan should be secured through an appropriately worded planning condition.

9. CUMULATIVE IMPACTS

9.1.1 Construction Stage

The HWD site adjacent to the west of the application site has been granted planning permission which would recycle waste collected from kerbside refuse collections. If this site was constructed at the same time as the proposed development there is a risk of increased impacts from dust emissions during the construction period; however, the HWD would be required to implement stringent mitigation measures similar to those that would be implemented for the proposed development which would reduce the risk of emissions occurring. Given the location of sensitive receptors it is anticipated to be a low risk of cumulative impacts occurring during the construction stage.

9.1.2 Operational Stage

Dust Emissions

Both the adjacent waste recycling facility and the proposed development have the potential to generate dust emissions and therefore result in dust impacts at nearby sensitive receptors. However, a review of the proposed HWD facility indicates that material delivered to the application site would be deposited, sorted and re-bundled within a materials handling unit. The type of material being recycled would be from kerbside refuse collection and therefore would have low potential for dust emissions. The application site would also operate under strict controls set out within the operating permit which would prevent significant emissions to air.

As detailed previously within this report the surrounding area has a low sensitivity to dust effects due to the high separation distances between source and receptors. As both sites would implement best practice techniques for the control of dust the cumulative impacts are unlikely to be significant.

Traffic Impacts

The modelling assessment has taken into account traffic generated by the adjacent HWD.

Traffic generated by the HWD alone is predicted to increase NO₂ concentrations at receptors 3 to 9, with a maximum change in concentrations of up to 0.8 µg/m³ predicted, as shown in Table 9.1. The results equate to a 2% change in the AQAL at receptors 6 and 7 which are located on Southall Lane to the south of the application site and a 1% change at receptors 3, 4, 8 and 9. Based on criteria set out in Table 5.2, because of the existing high concentrations of annual mean NO₂ the impact of the HWD development is considered to be major adverse at receptors 4, 6 and 7 and moderate adverse at receptors 3, 8 and 9.

The proposed development would not result in a change in NO₂ at any of these receptors. Therefore, the cumulative impact would remain as major adverse at receptors 4, 6 and 7 and moderate adverse at receptors 3, 4, 8 and 9.

As detailed previously the proposed development is predicted to result in a moderate adverse impact at receptors 1 and 2. The HWD would not result in a change in concentrations at these two locations therefore the cumulative impact would remain as moderate adverse at both these receptor locations.

On this basis it is concluded that cumulative effects on air quality would not arise as a result of the combined operation of the proposed development and the HWD development.

Table 9.1: Predicted Annual Mean NO₂ Concentrations (µg/m³)					
Receptor	2018 Base	2018 Base + HWD	Change due to HWD as a % of AQAL	Significance of HWD Impact	Significance of Cumulative Impact
1	43.6	43.6	0	Negligible	Moderate Adverse
2	42.4	42.4	0	Negligible	Moderate Adverse
3	46.0	46.1	0	Negligible	Negligible
4	50.4	50.6	1	Major adverse	Major adverse
5	41.7	41.8	0	Negligible	Negligible
6	49.9	50.7	2	Major adverse	Major adverse
7	49.0	49.7	2	Major adverse	Major adverse
8	34.5	34.7	0	Negligible	Negligible
9	41.9	42.4	1	Moderate Adverse	Moderate Adverse

The cumulative impact of both developments on annual mean PM₁₀ and PM_{2.5} concentrations is predicted to be no more than 0.2 µg/m³, therefore the cumulative impact would be negligible for both pollutants.

10. ASSESSMENT OF RESIDUAL EFFECTS

10.1 Construction Stage Effects

By following the mitigation measures outlined within this assessment, which should be secured through an appropriately worded planning condition, it is expected that the impact would be substantially mitigated. Accordingly residual effects are considered to be **Negligible**.

10.2 Operational Stage Effects

Dust Emissions

Through the implementation of on-site dust emission controls the risk of dust emissions would be substantially reduced. Accordingly residential effects are considered to be **Negligible**.

Traffic Impacts

As set out previously, the EPUK/IAQM guidance indicates that the overall assessment of significance from operational effects should be based on professional judgement taking into account a number of factors including the overall air quality with the development in place, the future population exposure and to what extent the assessment is considered a worst case.

The road traffic modelling has used 2015 background data to predict the concentrations for the future scenarios and has assumed all materials would be delivered in smaller 7 tonne HGV. Therefore it is considered to be a conservative worst case.

The maximum increase in annual mean NO₂ concentrations as a result of traffic associated with the proposed development is 0.3 µg/m³ at off-site receptors. This results in a moderate adverse impact at two receptors and a negligible impact at all other locations.

The proposed development is predicted to have a negligible impact on PM₁₀ and PM_{2.5} concentrations.

Overall the impact of traffic emissions from the proposed development is considered to be small and is likely to reduce through the use of larger HGVs (which would reduce the number of trips generated by the proposed development) and the implementation of the Travel Plan. On this basis, it is considered that the completed proposed development would result in at worst a **Minor Adverse** effect on local air quality and at identified receptors and as such would not give rise to a significant effect on air quality.

10.3 Cumulative Effects

The prediction of cumulative impacts has indicated that whilst adverse impacts on air quality are predicted from both the proposed development and the HWD development, these impacts are caused by each development in isolation, i.e. the proposed development gives rise to adverse impacts at receptors to the north, with no increase at receptors to the south and the HWD development gives rise to adverse impacts on receptors to the south, with no impact at the receptors to the north. On this basis it is concluded that there are **no significant cumulative effects**.

11. SUMMARY AND CONCLUSIONS

It is inevitable that with any development construction activities would cause some disturbance to those nearby and the assessment has predicted a low risk of effects at nearby receptors prior to the implementation of any on-site mitigation; however, following the implementation of appropriate mitigation measures, which would be set out within a DMP, impacts associated with the construction of the development are likely to be negligible.

A review of onsite operations indicated that the development would be designed to meet the best available techniques set out within the Defra guidance note 3/01(12) to minimise emissions of dust. Furthermore, the majority of operations would be carried out within enclosed or screened areas or would be damped down to prevent wind-whipping. Operational dust emissions from the proposed development are therefore likely to be negligible. Furthermore, given the separation distances between source and receptor the impact of residual emissions is highly unlikely to result in a significant effect at the nearest sensitive receptors.

The ADMS dispersion model has been used to predict the impact of traffic generated by the operational development on local NO₂, PM₁₀ and PM_{2.5} concentrations.

Traffic associated with the proposed development is predicted to increase annual mean NO₂ concentrations by 0.3 µg/m³. However because of the existing high pollutant concentrations this relatively minor increase is predicted to give rise to a moderate adverse impact on NO₂ concentrations at receptors along North Hayes Road. At all other locations a negligible impact is predicted and on PM₁₀ and PM_{2.5} concentrations.

As part of the development proposals the existing C&D recycling facility located on Lionel Road, Brentford would be relocated to the Application Site which would reduce vehicle movements within Brentford resulting in a positive impacts on air quality in this area. Furthermore the predicted change in traffic is based on worst-case assumptions.

The impact of traffic emissions from the proposed development is considered to be small and could be further reduce through the use of larger HGV (which would reduce the number of trips generated by the development) and the implementation of a Travel Plan. Overall, it is considered that the completed proposed development would result in a **Minor Adverse** effect on local air quality and at identified receptors and as such would not give rise to a significant effect on air quality.

APPENDIX 1 CONSTRUCTION SITE ASSESSMENT METHODOLOGY

The main air quality impacts that may arise during construction activities are dust deposition resulting in the soiling of surfaces e.g. cars, window sills; visible dust plumes and elevated PM₁₀ concentrations as a result of dust generating activities on the application site. These dust emissions can give rise to annoyance at nearby receptors due to the soiling of surfaces by the dust.

Separation distance is also an important factor. Research indicates that particles greater than 30µm, will largely deposit within 100 metres of sources, while intermediate particles (10-30µm) are likely to travel 100 –250m²⁷ under normal meteorological conditions before returning to the surface. Particles of greater than 30µm are responsible for the majority of dust annoyance. Consequently, significant dust annoyance is usually limited to within a few hundred metres of its source. Smaller particles (<10µm) are deposited slowly and can travel up to 1 km; however, the most significant impacts on short term concentrations of PM₁₀ occur within a shorter distance from source. This is due to the rapid decrease in concentrations with increasing distance from the source due to dispersion.

The assessment of construction impacts has followed the methodology set out within guidance produced by the IAQM on assessing impacts from construction activities²⁸.

In order to assess the potential impacts, the activities on construction sites are divided into four categories. These are.

- demolition (removal of existing structures);
- earthworks (soil-stripping, ground-leveling, excavation and landscaping);
- construction (activities involved in the provision of a new structure); and
- trackout (the transport of dust and dirt from the construction site onto the public road network where it may be deposited and then re-suspended by vehicles using the network).

For each activity, the risk of dust annoyance, health and ecological impact is determined using three risk categories: low, medium and high risk. The risk category may be different for each of the four activities. The risk magnitude identified for each of the construction activities is then compared to the number of sensitive receptors in the near vicinity of the application site in order to determine the risks posed by the construction activities to these receptors.

Step 1: Screen the Need for an Assessment

The first step is to screen the requirement for a more detailed assessment. An assessment is required where there is:

- a 'human receptor' within 350m of the boundary of the application site or 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the application site entrance(s); and/or
- an 'ecological receptor' within 50m of the boundary of the application site; or 50m of the route(s) used by the construction vehicles on the public highway, up to 500m from the application site entrance(s).

Step 2A: Define the Potential Dust Emission Magnitude

This is based on the scale of the anticipated works and the proximity of nearby receptors. The risk is classified as small, medium or large for each of the four categories.

²⁷ Arup, The Environmental Effects of Dust at Surface Mineral Workings. (Report to the DETR)

²⁸ IAQM (January 2014) Guidance on the Assessment of Dust from Demolition and Construction. Version 1.1

Demolition: The potential dust emission classes for demolition are:

- Large: Total building volume $>50,000\text{m}^3$, potentially dusty construction material (e.g. Concrete), on site crushing and screening, demolition activities $>20\text{m}$ above ground level;
- Medium: total building volume $20,000\text{m}^3 - 50,000\text{m}^3$, potentially dusty construction material, demolition activities $10\text{-}20\text{ m}$ above ground level; and
- Small: total building volume $<20,000\text{m}^3$, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities $<10\text{m}$ above ground, demolition during wetter months.

Earthworks: This involves excavating material, haulage, tipping and stockpiling. The potential dust emission classes for earthworks are:

- Large: Total site area $>10,000\text{m}^2$, potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds $>8\text{ m}$ in height, total material moved $>100,000$ tonnes;
- Medium: Total site area $2,500\text{ m}^2 - 10,000\text{m}^2$, moderately dusty soil (e.g. silt), $5 - 10$ heavy earth moving vehicles active at any one time, formation of bunds $4\text{m} - 8\text{m}$ in height, total material moved $20,000$ tonnes- $100,000$ tonnes; and
- Small: Total site area $<2,500\text{m}^2$, soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds $<4\text{ m}$ in height, total material moved $<20,000$ tonnes, earthworks during wetter months.

Construction: The important issues here when determining the potential dust emission magnitude include the size of the building(s)/infrastructure, method of construction, construction materials, and duration of build. The categories are:

- Large: Total building volume $>100,000\text{m}^3$, on site concrete batching, sandblasting;
- Medium: Total building volume $25,000\text{m}^3 - 100,000\text{m}^3$, potentially dusty construction material (e.g. concrete), on site concrete batching; and
- Small: Total building volume $<25,000\text{m}^3$, construction material with low potential for dust release (e.g. metal cladding or timber).

Trackout: The risk of impacts occurring during trackout is predominantly dependent on the number of vehicles accessing the application site on a daily basis. However, vehicle size and speed, the duration of activities and local geology are also factors which are used to determine the emission class of the application site as a result of trackout. The categories are:

- Large: >50 HDV ($>3.5\text{t}$) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length $>100\text{m}$;
- Medium: $10\text{-}50$ HDV ($>3.5\text{t}$) outward movements in any one day, moderately dusty surface material (e.g. high clay content, unpaved road length $50\text{-}100\text{m}$; and
- Small: <10 HDV ($>3.5\text{t}$) outward movements in any one day, surface material with low potential for dust release, unpaved road length $>50\text{m}$.

Step 2B: Defining the Sensitivity of the Area

The sensitivity of the area is defined for dust soiling, human health (PM_{10}) and ecological receptors. The sensitivity of the area takes into account the following factors:

- the specific sensitivities of receptors in the area;
- the proximity and number of receptors;
- in the case of PM_{10} , the local background concentration; and
- site specific factors, such as whether there are natural shelters, such as trees, to reduce the risk of wind-blown dust.

Table 1.1 is used to define the sensitivity of different types of receptors to dust soiling, health effects and ecological effects.

Table 1.1: Examples of Factors Defining Sensitivity of an Area			
Sensitivity of Area	Dust Soiling	Human Receptors	Ecological Receptors
High	Users can reasonably expect enjoyment of a high level of amenity The appearance, aesthetics or value of their property would be diminished by soiling' The people or property would reasonably be expected to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land. E.g. dwellings, museums and other important collections, medium and long term car parks and car showrooms.	10 – 100 dwellings within 20 m of site. Local PM₁₀ concentrations close to the objective (e.g. annual mean 36 - 40 µg/m³). E.g. residential properties, hospitals, schools and residential care homes.	Locations with an international or national designation and the designated features may be affected by dust soiling. Locations where there is a community of a particularly dust sensitive species such as vascular species included in the Red List for Great Britain. E.g. A special Area of Conservation (SAC).
Medium	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. The appearance, aesthetics or value of their property could be diminished by soiling The people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land. E.g. parks and places of work.	Less than 10 receptors within 20 m. Local PM₁₀ concentrations below the objective (e.g. annual mean 30-36 µg/m³). E.g. office and shop workers but will generally not include workers occupationally exposed to PM₁₀ as protection is covered by the Health and Safety at Work legislation.	Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown. Locations with a national designation where the features may be affected by dust deposition E.g. A site of Special Scientific Interest (SSSI) with dust sensitive features.
Low	The enjoyment of amenity would not reasonably be expected. Property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling.	Locations where human exposure is transient. No receptors within 20 m. Local PM₁₀ concentrations well below the objectives (less than 75%).	Locations with a local designation where the features may be affected by dust deposition. E.g. local Nature Reserve with dust sensitive features.

Table 1.1: Examples of Factors Defining Sensitivity of an Area

	There is transient exposure, where the 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. E.g. playing fields, farmland unless commercially sensitive horticultural, footpaths, short lived car [parks and roads.	E.g. public footpaths, playing fields, parks and shopping streets.	
--	--	--	--

Based on the sensitivities assigned to the different receptors surrounding the application site and numbers of receptors within certain distances of the application site, a sensitivity classification can be defined for each. Tables A1.2 to A1.4 indicate the criteria used to determine the sensitivity of the area to dust soiling, human health and ecological impacts.

Table 1.2: Sensitivity of the Area to Dust Soiling on People and Property

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		<20	<50	<100	<350
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table 1.3: Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Annual Mean PM ₁₀ Concentration	Number of Receptors	Distance from Source (m)				
			<20	<50	<100	<200	<350
High	>32 µg/m ³	>100	High	High	High	Medium	Low
		10-100	High	High	Medium	Low	Low
		1-10	High	Medium	Low	Low	Low
	28-32 µg/m ³	>100	High	High	Medium	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	High	Medium	Low	Low	Low
	24-28 µg/m ³	>100	High	Medium	Low	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	<24 µg/m ³	>100	Medium	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low

Table 1.3: Sensitivity of the Area to Human Health Impacts							
Medium	>32 µg/m³	>10	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	28-32 µg/m³	>10	Medium	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	24-28 µg/m³	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	<24 µg/m³	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low	Low

Table 1.4: Sensitivity of the Area to Ecological Impacts		
Receptor Sensitivity	Distance from the Source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

Define the Risk of Impacts

The final step is to combine the dust emission magnitude determined in step 2A with the sensitivity of the area determined in step 2B to determine the risk of impacts with no mitigation applied. Tables A1.5 to A1.7 indicate the method used to assign the level of risk for each construction activity. The identified level of risk is then used to determine measures for inclusion within a site-specific Construction Management Plan (CMP) aimed at reducing dust emissions and hence reducing the impact of the construction phase on nearby receptors. The mitigation measures are drawn from detailed mitigation set out within the IAQM guidance document.

Table 1.5: Risk of Dust Impacts from Demolition			
Sensitivity of Area	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible

Table 1.6: Risk of Dust Impacts from Earthworks/ Construction			
Sensitivity of Area	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table 1.7: Risk of Dust Impacts from Trackout			
Sensitivity of Area	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk

Table 1.7: Risk of Dust Impacts from Trackout			
Medium	Medium Risk	Low Risk	Negligible
Low	Low Risk	Low Risk	Negligible

APPENDIX 2

TRAFFIC DATA USED IN ADMS MODELLING

Table 2.1: Traffic Data Used Within the Assessment									
Road	Speed (kph)	Baseline 2015		Baseline 2018		2018 Base + HWD		2018 Base + HWD + Proposed Development	
		AADT	% HGVs	AADT	% HGVs	AADT	% HGVs	AADT	% HGVs
1. Southall Lane – south of Site Access	48 (15 past Cranford College to account for congestion)	13522	9.5	13941	9.5	14071	10.1	14091	10.1
2. Southall Lane – north of Site Access	48	17735	5.7	18280	5.7	18673	5.8	19744	7.3
3. Hayes Road – east of Southall Lane	48	36255	4.3	37371	4.3	37549	4.4	37674	4.3
4. Hayes Road – West of Southall Lane	56	39638	4.9	40857	4.9	41071	4.9	42017	5.6
5. Hayes Road – east of Costco	56	40120	4.9	41354	4.9	41568	4.9	42514	5.6
6. Hayes Road – west of Costco	56	41726	4.6	43009	4.6	43223	4.6	44169	5.3
7. Hayes Road – East of Tesco	56	43886	4.3	45234	4.3	45448	4.3	46394	4.9

Table 2.1: Traffic Data Used Within the Assessment

Road	Speed (kph)	Baseline 2015		Baseline 2018		2018 Base + HWD		2018 Base + HWD + Proposed Development	
		AADT	% HGVs	AADT	% HGVs	AADT	% HGVs	AADT	% HGVs
8 – Hayes Road – west of Costco	56	45537	4.8	46937	4.8	47151	4.8	48098	5.4
9 – Hayes Road at roundabout	25	45073	4.9	46459	4.9	46673	4.8	47619	5.5
10 – The Parkway - south of Hayes Road	56 (25 at roundabout)	69395	5.1	71527	5.1	71599	5.1	71974	5.2
11 – North Hyde Road	48 (25 at roundabout)	29329	5.1	30230	5.1	30284	5.1	30498	5.4
12 – The Parkway – north of Hayes	56 (25 at roundabout)	77642	3.6	80027	3.6	80116	3.6	80491	3.8

Kph: Kilometres per hour

APPENDIX 3 VERIFICATION AND ADJUSTMENT OF MODELLED CONCENTRATIONS

NO₂ Concentrations

Most nitrogen dioxide (NO₂) is produced in the atmosphere by reaction of nitric oxide (NO) with ozone. It is therefore most appropriate to verify the model in terms of primary pollutant emissions.

Verification of concentrations predicted by the ADMS model has followed the methodology presented in LAQM.TG(16).

Verification of the model results has been carried out against the Hillingdon Automatic Monitoring site on North Hayes Road and the Hounslow diffusion tube site on Southall Road.

The model output of road-NO_x (i.e. the component of total NO_x coming from road traffic) has been compared with the 'measured' road-NO_x (Table 3.11 and Figure 3.1). The 'measured' road NO_x has been calculated from the measured NO₂ concentrations by using the Defra NO_x from NO₂ calculator available on the UK-AIR website.

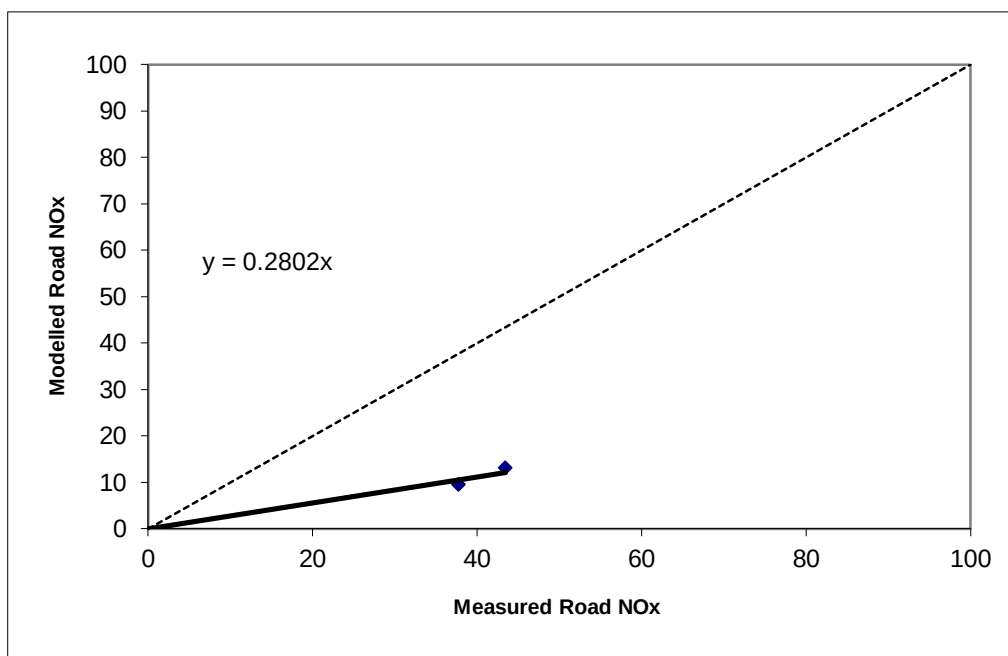


Figure 3.1: Comparison of Modelled Road NO_x with Measured Road NO_x

Figure 3.1 shows that the ADMS model is under-predicted the road-NO_x concentrations at the monitoring sites. An adjustment factor has therefore been determined as the ratio between the measured road-NO_x contribution and the modelled road-NO_x contribution, forced through zero ($1/0.2802 = 3.57$). Further details on how this factor has been derived are set out in Table 3.2. This factor has been applied to the modelled road-NO_x concentration for each location to provide an adjusted modelled road-NO_x concentration.

The annual mean road-NO₂ concentration was determined using the Defra NO_x:NO₂ spreadsheet calculation tool and added to the background NO₂ concentration to produce a total adjusted NO₂ concentration (Table 3.3).

Figure 3.2 shows the adjusted modelled total NO₂ vs monitored NO₂. There is good agreement, but the best fit line forced through zero still has a slight departure from a 1:1 line, thus a secondary adjustment factor, to be applied to the adjusted modelled total NO₂, was calculated ($1/0.998 = 1.002$).

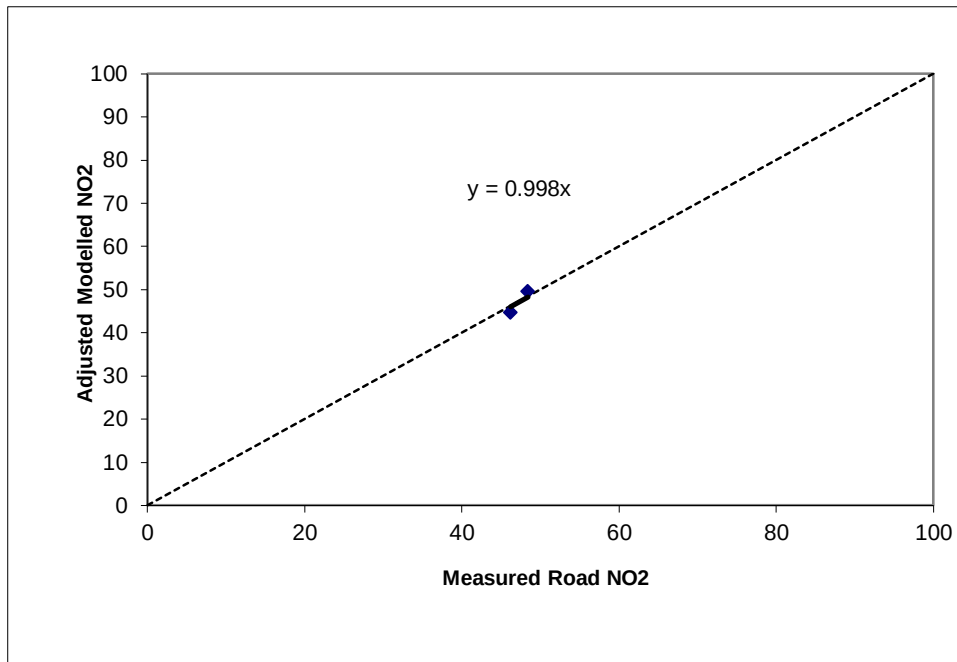


Figure 3.2: Comparison of Modelled NO₂ with Measured NO_x

After carrying out an initial adjustment there was a need for only a very small secondary adjustment of NO₂. The final adjustment modelled values are shown in Figure 3.3.

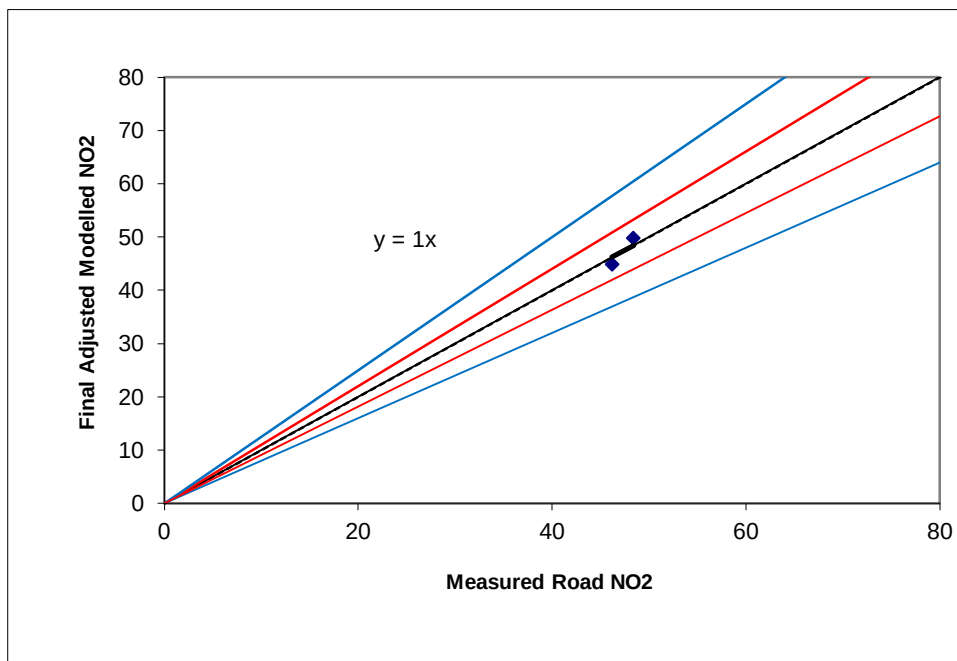


Figure 3.3: Comparison of Adjusted Modelled NO₂ with Measured NO_x

The adjustment factor of 3.57 has been applied to the modelled NO_x-road concentrations predicted at the selected receptor locations. The predicted NO₂-road concentrations, calculated using the NO_x-NO₂ converter tool, have subsequently been added to background NO₂ and adjusted by 1.002 to provide the final predicted annual mean NO₂ concentrations at each receptor.

Table 3.1: Comparison of modelled and monitored NO2 Concentrations

Receptor name	X(m)	Y(m)	Monitored total NO ₂	Modelled Total NO ₂	% Difference ((modelled-monitored)/monitored)x100
HS54			48.4	36.0	-25.6
HIL5			46.2	34.4	-25.5

Table 3.2: Model Adjustment Calculation (based on LAQM. TG(16) Guidance) Part 1

Receptor name	Monitored total NO ₂	Monitored Total NO _x	Background NO ₂ (2015)	Background NO _x (2015)	Monitored Rd contribution NO ₂	Monitored Rd contribution NO _x	Modelled Rd Contribution NO _x (excludes bkgd)
HS54	48.4	87.5	30.0	44.0	18.4	43.5	13.1
HIL5	46.2	81.7	30.0	44.0	16.2	37.7	9.5

Table 3.3: Model Adjustment Calculation (based on LAQM. TG(16) Guidance) Part 2

Receptor name	ratio of monitored road contribution NO _x /modelled road contribution NO _x	Adjustment factor for Rd Contribution (1/average ratio calculated in column L)	adjusted modelled Rd contribution NO _x	Adjusted total NO _x	Adjusted Total NO ₂	1/(Ratio of monitored NO ₂ /adjusted modelled NO ₂)	Final Adjusted Total NO ₂	% difference [(modelled-monitored)/monitored]x100
HS54	0.2802	3.57	46.8	90.8	49.6	1.002	49.7	2.7
HIL5			33.9	77.9	44.7		44.8	-3.0

PM₁₀ Concentrations

Verification of concentrations predicted by the ADMS model has followed the methodology presented in LAQM.TG(16).

Verification of the model results has been carried out against the Hillingdon Automatic Monitoring site on North Hayes Road.

The model output of road-PM₁₀ has been compared with the 'measured' road-PM₁₀ (Figure 3.4).

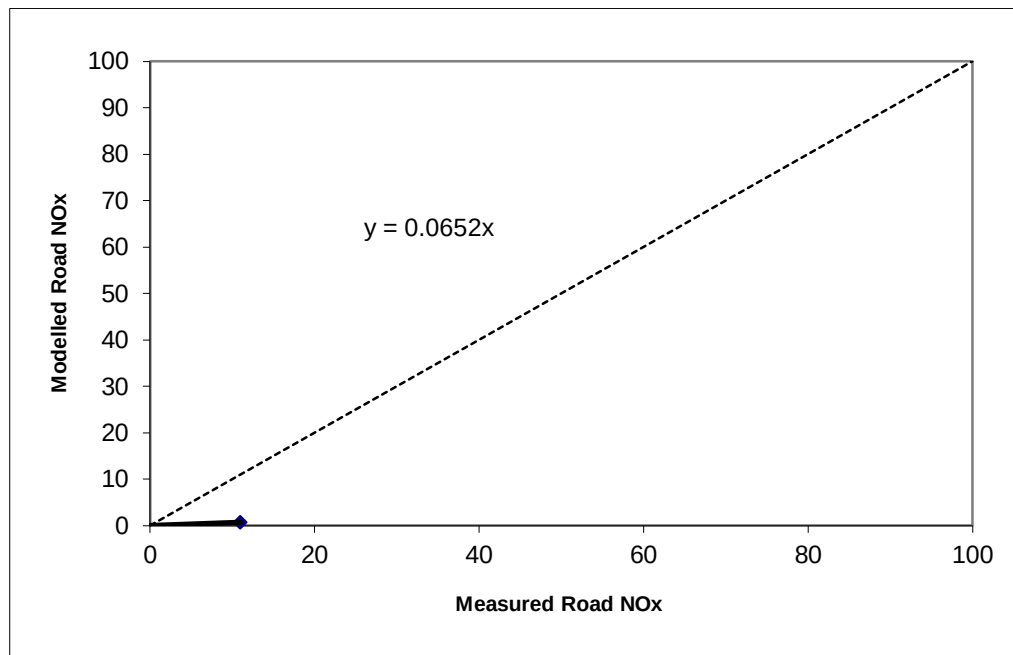


Figure 3.4: Comparison of Modelled Road PM₁₀ with Measured Road PM₁₀

Figure 3.4 shows that the ADMS model is under-predicted the road-PM₁₀ concentrations at the monitoring site. An adjustment factor of 15.34 ($1/0.0652$) has therefore been calculated and applied to the predicted PM₁₀ concentrations prior to being added to background concentrations. . This factor has also been used to adjust the predicted PM_{2.5} concentrations.

APPENDIX 4

EMISSION LIMITS FROM PGN 3/01(12)

Substance	Source	Emission Limits/Provision	Type of Monitoring	Monitoring Frequency
Particulate Matter	Whole Process	No visible airborne emission to cross site boundary where harm or nuisance may be caused	Operator Observations	At least daily
	Arrestment equipment, or any point where dust contaminated air is extracted from the process to atmosphere, with exhaust flow >300 m ³ /min.	50 mg/m ³	Recorded indicative monitoring	Continuous
			Isokinetic sampling	At least once to demonstrate compliance, then as necessary to provide a reference for the continuous indicative monitor
	Arrestment equipment, or any point where dust contaminated air is extracted from the process to atmosphere, with exhaust flow >100 m ³ /min.	No visible emissions Arrestment equipment should be provided with a design guarantee that the equipment can meet 50 mg/m ³	Indicative monitoring to demonstrate that the arrestment equipment is functioning properly	Continuous
	Arrestment equipment, or any point where dust contaminated air is extracted from the process to atmosphere, with exhaust flow <100 m ³ /min.	No visible emission	Operator Observation or Indicative monitoring	At least daily or continuous

Intended for
Quattro Ltd

Date
March 2017

Project Number
UK11-23192

WASTE RECYCLING FACILITY AND CONCRETE BATCHING PLANT, SOUTHALL LANE, HAYES

ADDENDUM AIR QUALITY ASSESSMENT

**WASTE RECYCLING FACILITY AND CONCRETE
BATCHING PLANT, SOUTHALL LANE, HAYES
ADDENDUM AIR QUALITY ASSESSMENT**

Project No. **UK11-23192**
Issue No. **2**
Date **27/03/2017**
Made by **Lesley Vining**
Checked by **Hannah Dalton**
Approved by **Lesley Vining**

Made by: Lesley Vining

Checked/Approved by: Hannah Dalton

This report has been prepared by Ramboll Environ with all reasonable skill, care and diligence, and taking account of the Services and the Terms agreed between Ramboll Environ and the Client. This report is confidential to the Client, and Ramboll Environ accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known, unless formally agreed by Ramboll Environ beforehand. Any such party relies upon the report at their own risk.

Ramboll Environ disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the Services.

Version Control Log

Revision	Date	Made by	Checked by	Approved by	Description
1	27/03/17	LV	HD	LV	Final Draft
2	27/03/17	LV	HD	LV	Final

Ramboll Environ
Aston Court
Pynes Hill
Exeter
Devon
EX2 5AZ
United Kingdom
T +44 139 244 0600
www.ramboll-environ.com

CONTENTS

1.	INTRODUCTION	1
1.1	Overview	1
1.2	Scope of Addendum Report	1
2.	NEIGHBOURING OPERATORS	2
2.1	Virtus Datacentre	2
2.2	Costco	2
3.	EXISTING QUATTRO OPERATIONS	3
3.1	Park Royal, NW10	3
3.2	Lionel Road, Southall	3
4.	MONITORING DATA	5
4.1	Particulate Monitoring	5
5.	DUST MITIGATION	6
5.1	Introduction	6
5.2	Environmental Permitting Regulations	6
5.3	Facility Design and Operational Controls	6
5.4	Dust Management Plan	8
5.5	Dust Monitoring Plan	10
6.	POTENTIAL FOR DUST IMPACTS AT NEIGHBOURING PREMISES	11
6.1	Virtus	11
6.2	Costco	11
6.3	Conclusion	11

APPENDICES

Appendix 1

Site Plans

Appendix 2

Particulate monitoring

Appendix 3

Park Royal and Lionel Road operating permits

1. INTRODUCTION

1.1 Overview

This report provides additional air quality information with regards to the Waste Recycling Facility (WRF) and Concrete Batching Plant (CBP) (the proposed development) proposed to be located at Southall Lane, Hayes. A planning application for the WRF and CBP was submitted by Quattro Ltd in December 2016, which was accompanied by a number of technical assessments including an Air Quality Assessment¹.

Following submission of the planning application a number of objections were received from neighbouring site occupants principally in relation to potential dust impacts. As a result additional information has been requested to address these issues and is presented within this Addendum Report.

1.2 Scope of Addendum Report

The scope of the addendum report is limited to the following:

- Provide a summary of the findings of a site visit of the neighbouring operators;
- Provide additional information on Quattro's existing site operations including details of a particulate monitoring exercise carried out at an existing WRF site; and
- Provide details of the mitigation measures that are to be included within the proposed development to mitigate dust impacts at neighbouring premises.

It should be noted that the addendum report does not repeat information already included within the original assessment (Dated December 2016), other than to comprehensively list all mitigation measures previously stated in addition to those additionally proposed. As such it should therefore be read in conjunction with this report to provide a complete assessment of likely impacts as a result of the proposed development.

¹ Ramboll Environ, December 2016, Air Quality Assessment Waste Recycling Facility and Concrete Batching Plant, Southall Lane, Hayes (Report Ref UK11-23192)

2. NEIGHBOURING OPERATORS

A site visit was carried out to both Virtus and Costco on the 22/03/2017 to gain a further understanding of their concerns regarding the proposed development and how their respective operations function.

It was noted at the time of the visit that the site adjacent to the west of the proposed Quattro facility is currently under construction to provide a household waste recycling centre (HWRC). The ground works have been completed and the steel frame is in place. The site is obviously a source of dust, it was unsurfaced with uncovered storage piles of building materials and aggregates, together with vehicles moving over unmade ground. There was significant dirt on the entrance road which was being tracked out onto the main road.

2.1 Virtus Datacentre

The Virtus Datacentre is located approximately 80 m north west of the proposed development and comprises a large building housing a datacentre with a number of data halls and ancillary equipment, including back-up generators, air conditioning plant and office accommodation. At any one time there can be between 70 to 100 people working on site, with the site operating on a 24/7 basis.

Virtus is concerned that the proposed development could be a potential source of dust that would impact its ventilation systems which provide clean air to the data rooms and are also used for adiabatic cooling purposes. The facility has a requirement to ensure that the air quality within the data rooms is very clean to protect the equipment and Virtus undertakes regular hand held monitoring of air quality to ensure that standards are maintained.

There is concern that potential emissions from the proposed development could result in increased costs for Virtus due to increased maintenance and cleaning requirements as a result of increased dust burdens.

Virtus reported that it had not detected increased problems or maintenance requirement within its ventilation systems as a result of the current construction work being undertaken.

2.2 Costco

The Costco Wholesale Warehouse (Costco) is located immediately north of the proposed development. The Costco site comprises the main warehouse building with car parking to the north and east. A small area of car parking would be located immediately adjacent to the Quattro site. The main customer entrance to the warehouse is on the north eastern corner and deliveries are received within the service yard located in the north west of the building. As such these entrances would be over 100 m from the boundary with Quattro.

Costco's main concern is with respect to noise, but it is also concerned that dust could potentially impact food preparation although this is all under-taken internally and the delivery doors are all on the northern side of the building. There are no doors or windows on the elevation fronting onto the proposed development. The closest opening to the proposed development is the access into the tyre centre on the eastern façade of the building.

3. EXISTING QUATTRO OPERATIONS

Site inspections were carried out at two existing Quattro operating sites to obtain information on the effectiveness of existing operating procedures. It should be noted that as a new facility, the proposed Southall Lane development will be expected to install dust mitigation measures which comply with BAT and therefore the mitigation measures at Southall Lane will be more stringent than those currently in place on Quattro's existing sites.

In addition, consultation was carried out with the EA to obtain additional information on operational history of these sites.

3.1 Park Royal, NW10

Quattro operate a CBP and an aggregates and soil recycling facility at its facility in Park Royal. They have operated from this site for 18 years. Due to the planned closure of this site as a result of the HS2 proposals, it is proposed that the CBP element at this site would move to the Southall Lane site, albeit with a new purpose built CBP proposed for the Southall Lane Site. This site is in a highly urbanised environment with commercial activities adjacent to the north and west site boundary. The commercial premises are occupied by Boden and John Lewis/Waitrose, with car parking areas immediately adjacent to the Quattro site. John Lewis has recently vacated its site as it has been compulsory purchased as part of the HS2 proposals.

Quattro reported that they had received no complaint from either adjacent occupant relating to dust emissions.

During the site visit observations were made of the use of the wheel wash, water sprays to clean off cement tankers and the road sweeper cleaning the approach road. Cars belonging to adjacent office workers were seen to be parked immediately adjacent to the site boundary. No visible evidence of dust blow off was evident during the visit.

Quattro reported that there had been no recent inspections of the site by the EA. Discussions were had with the EA regarding the site operations and it was reported that as this was not considered to be a high risk site, a specific EA inspector had not been assigned to regularly inspect the site to ensure compliance with its permit.

The environmental permit for this site is attached in Appendix 3.

3.2 Lionel Road, Southall

Quattro currently operates a demolition and construction WRF at its site in Lionel Road, Southall and has been operating on the site for 14 years. A similar but significantly updated plant is proposed for the Southall Lane site to replace the Lionel Road facility. The Lionel Road Site is triangular shaped bordered on two sides by railway lines and on the third by Lionel Road. However beyond these uses are a number of new commercial units including an office development occupied by Kia and a self-storage company.

At this site the processes are largely undertaken in the open with extensive use of water sprays. The main exception is the picking stations which are enclosed. During the site visit there was evidence of use of the dust boss units to mitigate emissions from a trommel screen. Additionally it was observed that all of the yard area was kept damp to prevent dust blow-off. The staff were noted to be knowledgeable regarding the procedures for checking waste prior to acceptance and the additional mitigation measures that can be applied in the event that the waste contains a high proportion of fine particles.

No visible evidence of wind blown dust was observed during the site visit.

A discussion with the EA inspector responsible for the site indicated that he was happy that Quattro was operating within its permit conditions and was not causing dust impacts at neighbouring properties.

The environmental permit for this site is attached in Appendix 3.

4. MONITORING DATA

4.1 Particulate Monitoring

A recent particulate monitoring exercise has been carried out by S I Environmental at the Lionel Road site to measure fine particulate (PM₁₀) concentrations. PM₁₀ particles are less than 10 microns in diameter and are the fraction of dust that can give rise to health effects as the particles can be inhaled into the lungs. Whilst this is not a measure of total dust arising from the site it does give some indication as to whether dust mitigation measures are being effective in suppressing dust.

The monitoring was carried out for three days at three locations within the site and the resulting concentrations compared with measured data recorded at nearby monitoring sites. An average concentration of 22 µg/m³ was recorded at the site for the monitoring period. The site data indicated that the short term concentrations recorded over the three days of the monitoring survey compared favourably with the long term concentrations recorded at the off-site monitors and also demonstrated that the recorded concentrations were comfortably within the limits set for PM₁₀ objectives which are 40 µg/m³ as an annual mean and 50 µg/m³ as a daily mean.

The full study report is included at Appendix 2.

5. DUST MITIGATION

5.1 Introduction

For avoidance of doubt the information provided within the air quality assessment, Section 8 Dust Emissions – Mitigation by Design, are reiterated below together with details of the additional physical features which will be included within the proposed development to minimise dust emissions at source and control the spread of dust from the site onto neighbouring properties. The location of the individual elements are shown on the site plans provided in Appendix 1. It should be noted that a number of these features have been introduced subsequent to the initial planning application specifically to address the concerns of the neighbouring occupants. They include measures that would have been secured by the proposed Dust Management Plan required by condition and would be required by the site's operating permit (see below), which the operator will secure prior to operations commencing.

5.2 Environmental Permitting Regulations

The proposed development would be required to obtain a permit to operate under the Environmental Permitting (England and Wales) Regulations 2010². As a waste handling operation the permit is issued and regulated by the Environment Agency. As a new facility, to obtain a permit, the facility will have to demonstrate how it would comply with the Best Available Techniques (BAT) to prevent significant emissions of dust arising from the site. As such Quattro will have to apply the most up to date techniques available to mitigate dust impacts. The permit application is currently being prepared and will present full details of how the facility will comply with BAT not only to control dust emissions but all other elements of its operation.

5.3 Facility Design and Operational Controls

5.3.1 Delivery of Waste to Site

All waste delivered to the application site would be in sheeted vehicles to prevent wind whipping and dispersion of particles during transit. The majority of waste would be of mixed source including wood, plastics, metals and aggregates. Wood, plastics and metals would not give rise to significant dust emissions and aggregate is primarily made up of large grains which are not generally susceptible to suspension in air. However, there would be some smaller dust particles within the waste and there is a risk of emissions to air due to wind-whipping, although this would be limited to during unloading, storage and sorting of material. Enclosed areas for undertaking these activities are detailed below together with measures to dampen material.

5.3.2 Weighbridge Control

All deliveries to the site will pass through the weighbridge where CCTV will be used to check the incoming deliveries arriving on-site to ensure that they comply with the Quattro site permit. The camera will be positioned to provide a clear view of the waste so that adequate preparation can be made if waste is likely to contain a high degree of fine material.

5.3.3 Enclosed Waste Tipping Building

All waste deliveries will pass to the covered waste tipping building where they will be tipped from the delivery vehicles. This is the only area where incoming waste to the site will be tipped and stored and will be secured as such by condition.

² Secretary of State, 2010. The Environmental Permitting (England and Wales) (Amendment) Regulations 2010, Statutory Instruments 2010 No 676

The building will be approximately 9 m tall, enclosed on the north, east and west sides and fully roofed. The southern side would remain open to allow access but will be fitted with water sprays at roof level just inside the building to prevent dust emissions escaping from the building. Spray nozzles will be located at maximum 3m intervals.

Tipping activities would be under the direction of a banksman who would be able to quickly identify if a delivery contains particularly dusty material and where necessary use available water sprays from a water bowser which will be kept permanently on standby to dampen down material as required.

5.3.4 Stage 1 of the Waste Recycling Plant

The initial stage of the Waste Recycling Plant (WRP) which will comprise an initial screen and conveyor and the trommel screen to remove aggregates. This will be housed at the rear of the enclosed waste tipping building, thus preventing possible dust emissions. After passing through the trommel screen the remaining waste will pass by covered conveyor from the enclosed tipping building to the enclosed picking station.

5.3.5 Enclosed Picking Station

Within the picking station the waste is passed along a conveyor belt and is hand sorted into various waste streams such as cardboard, plastics, wood and metal. The waste is passed down various chutes into skips located beneath the picking station in covered bays to prevent dust blowoff. The back wall of the covered bays will be continuous with the picking station cabin above to prevent dust blow off. Skips which are full will either be removed to the material stockbays or covered and removed directly off-site for ongoing processing.

5.3.6 Final Product Building

The remaining waste materials which are predominantly hard core will be collected in a skip located in the final product building at the end of the picking station line. This building will be enclosed on north, west and east side and fully roofed to prevent dust blow off. A water spray will be provided on the open side of the building to further prevent the escape of dust emissions.

5.3.7 Concrete Batching Plant

The CBP will be fully enclosed and will be of the latest design suitable for use in urban locations. Ready mixed concrete can only be held in road transporters for a maximum of approximately 40 minutes and therefore batching plants are designed to be located in urban areas with stringent built in dust control.

Aggregate brought into site to be fed into the feed hoppers will arrive in a dampened state. It will be checked before tipping and dampened further as required.

All aggregate for use in the CBP would be transferred into the plant via enclosed covered conveyors and stored within enclosed integral aggregate storage bins.

Cement for use in the CBP would be delivered by tanker and discharged by a sealed pressurised pipe system into sealed cement silos. The silos would be fitted with dust filters and high-level pressure sensor alarms which would be linked to automatic shut-off valves on the fill pipe.

The loading and mixing process for the batching of concrete would be fully computer controlled and would occur within a fully enclosed mixer.

The plant will produce wet-batched concrete only which would be dropped into the mixer trucks for onward distribution. As a wet batch process it would therefore not generate dust.

5.3.8 Material stock bays

Overflow storage of aggregates to be used in the CBP will be stored in covered material stock bays to prevent wind whipping. The material is inherently damp and is therefore not considered a significant source of dust. However, automated sprays are proposed on the stock bays to ensure that the materials are kept damp.

5.3.9 Boundary Wall

Further enclosure of operational activities and potential sources of dust are proposed by the provision of a 3.5m high wall which will run along the western boundary and to the rear of the WRP close to the northern boundary and for a short extent along the eastern side of the WRP. This would comprise a 0.5 m high concrete stub with 3 m of sleepers and steel built up from the concrete wall. On the northern boundary this will be located to infill between the enclosed final product building and enclosed waste tipping building and run behind the CBP to provide a continuous barrier along the northern boundary of the operational part of the site and similarly down the western boundary. A similar wall will be located on the eastern side of the final product building which will extend down the majority of the yard area immediately in front of the picking station.

An automated sprinkler system would be installed at the top of the boundary wall to assist with dust mitigation. Spray nozzles would be placed at maximum intervals of 10 m.

5.3.10 Service Yard

The whole of the service yard will be laid to concrete to allow easy cleaning and to reduce possible dust blow-off from the movement of vehicles over unmade ground. The yard will be kept clean through the use of the road sweeper (see below).

The yard area immediately south of the waste picking station will be kept clean and damp through the use of a mobile dust suppression spray unit and road sweeper.

5.3.11 Wheel wash

All vehicles leaving the CBP and WRF will be required to pass through the wheel wash to prevent vehicles tracking mud and other debris onto the main road network.

5.3.12 Mobile Dust Suppression Spray Unit

In addition to the mobile dust suppression spray unit located adjacent to the picking station, a number of additional units will be held on the site to provide further dust mitigation as required. The operation of these machines will be at the discretion of the site manager and banksman. The units produce a fine mist which is highly effective in mitigating dust emissions from fugitive sources. In addition, a mobile water bowser will also be kept within the tipping building which can be used to provide rapid damping of smaller areas.

5.3.13 Road Sweeper

A road sweeper vehicle will be kept at the site and used continually during site working hours to clean the yard and access road up to Southall Lane. The sweeper will also be used on Southall Lane, upto Hayes Road when traffic conditions allow. This will prevent the track out of material onto the main road network.

5.4 Dust Management Plan

A comprehensive Dust Management Plan, as already agreed by the operator to be secured by condition, would be produced to cover the following management procedures that must be

undertaken and to give clear instructions to site workers on the actions that must be taken to prevent dust emissions. The condition to secure this would be expected to include wording to the effect that the Plan should cover as a minimum all of the measures outlined below.

The plan would be routinely reviewed at least once per month and updated as necessary.

5.4.1 Visual Inspections

Visual inspections of the facility including the immediate external perimeter of the facility would be undertaken by either the site manager or one of the senior site operatives at least twice per day to check for visual signs of dust deposition and dust emissions. The results of these inspections would be recorded in the site log together with information on weather conditions, wind speed and direction. In the event that visible signs of dust deposition or dust emissions are detected, the source of the dust would be immediately investigated and corrective action taken.

5.4.2 Maintenance

Effective control of airborne dust emissions requires the maintenance and proper use of all plant and equipment. A programme of planned maintenance will be carried out on all plant, in accordance with the manufacturer's recommendations, to ensure it operates to optimum efficiency. This includes all dust suppression equipment.

Stocks of essential spares and consumable items will be held at or kept readily available at short notice.

Any malfunctions or breakdowns will be dealt with promptly and operations adjusted or suspended until normal working can be restored. All malfunctions will be recorded in the site logbook.

The water supply shall be adequately protected against frost to ensure its availability for dust suppression at all times.

5.4.3 Site Management

The site manager will exercise, either personally or by delegation to suitably trained and responsible staff, day to day control on site. The site manager will be responsible for ensuring full compliance with the site Dust Management Plan and satisfactory working of the whole site.

Staff at all levels will receive the necessary training and instruction in their duties relating to all operations and the potential sources of dust emissions.

Any member of staff who wilfully or negligently fails to comply with the provisions of the Dust Management Plan will be subject to disciplinary action. Any external hauliers who fail to observe the requirements in respect of vehicle operations will be banned from the site.

The Site Manager will ensure that a high standard of housekeeping is maintained at all times.

5.4.4 Complaints and Neighbour Liaison.

In the event of a complaint concerning dust, the complaint will be recorded and reported to the Site Manager, who would be required to take immediate action to investigate the source of the dust and to take corrective action as required. A prompt response will be required to be made to the complainant and a record, including copies of all correspondence and file notes, will be made in the complaints register.

The Council and the EA would be advised in writing, within one week of any dust complaint received, together with details of the findings of the investigation and any corrective measures which have been taken.

A neighbour liaison protocol will be put in place so that details of the site manager's name and contact details are provided before commencement of operation and updated as required.

5.5 Dust Monitoring Plan

Automatic dust monitors would be set up at two locations on the site boundary to provide real time measurements of dust levels at the site. It is anticipated that the monitors would be located on a transect across the site with one located close to the entrance on the western boundary and one at the north east corner close to the boundary with Costco.

The monitors would be programmed with a site action level which would alert the site operatives in the event that elevated levels of particulates and dust have occurred. If the alert threshold is triggered, investigative action would be carried out to determine the reason for the elevated reading and to take appropriate mitigation action, if required.

The results of the dust monitoring would be included within the site log and would be available for inspection by the Council and EA.

6. POTENTIAL FOR DUST IMPACTS AT NEIGHBOURING PREMISES

6.1 Virtus

The Virtus datacentre would be approximately 80 m west from the boundary of the proposed Quattro development and over 100 m from the WRF. The datacentre is upwind of the prevailing wind direction. Additionally, the new HWRC will be located between the two sites and will effectively act as a screen shielding the Virtus centre from potential dust impacts.

Through the combination of the dust mitigation measures outlined in Section 5, together with the distance from the proposed development and the presence of the HWRC, the potential for significant dust emissions to impact the Virtus centre is considered to be negligible.

6.2 Costco

Costco will be located immediately adjacent to the northern boundary of the proposed Quattro development. However, to address the concerns of adjacent neighbours a number of revisions to the site layout have been proposed resulting in the enclosure of the WRP and final product building and the provision of a 3.5 m solid fence on the northern and western boundaries – effectively segregating the operational areas from Costco.

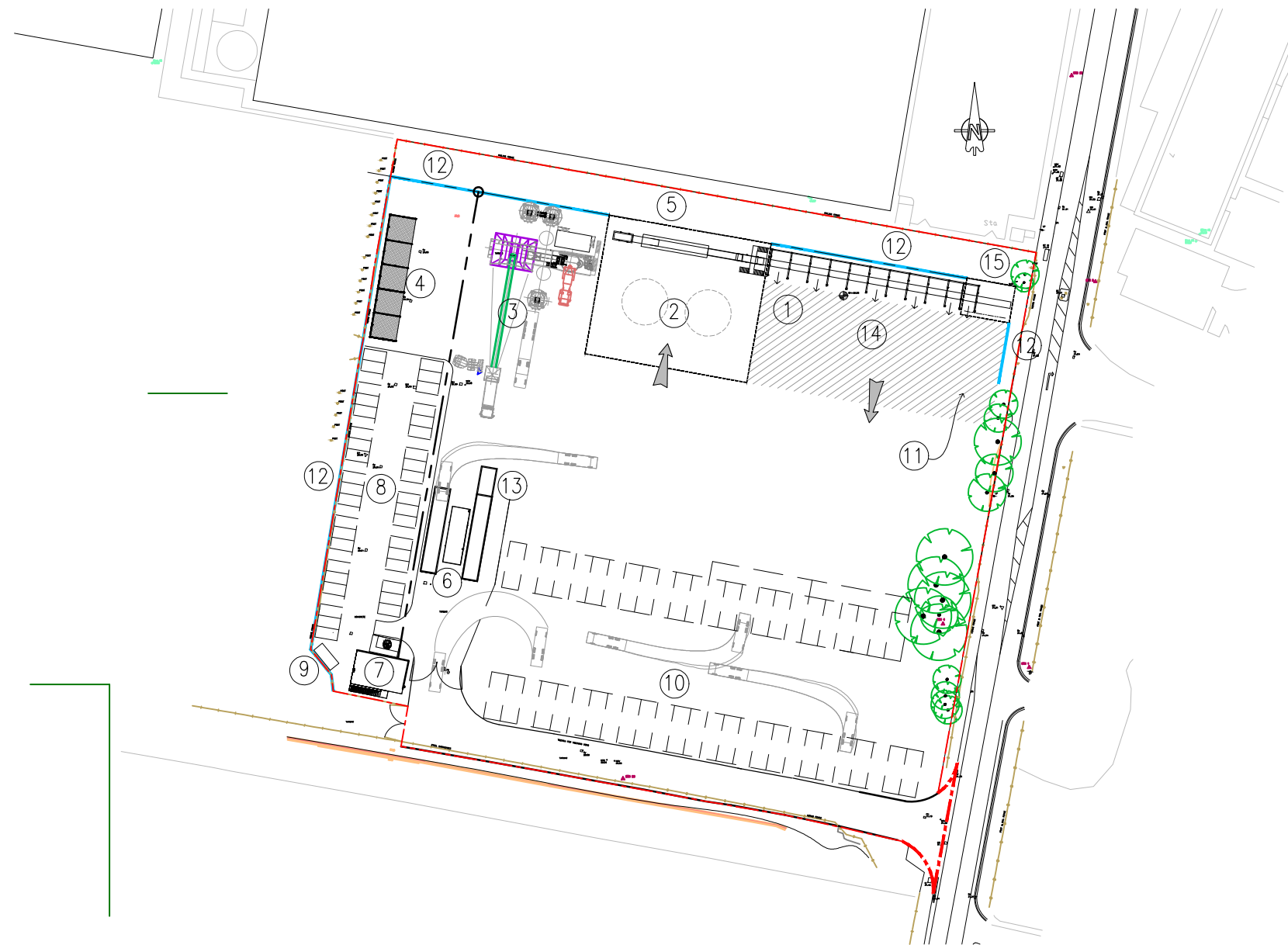
Through the provision of these measures, together with the other dust mitigation measures outlined in Section 5 which will be a condition of the planning permission and of the facilities operating permit, it is considered that dust emissions will be effectively controlled to result in negligible impacts on Costco's operations.

6.3 Conclusion

In conclusion, having assessed the neighbouring operations, reviewed the effective dust management practices currently employed at Quattro's existing facilities and through the provision of enhanced mitigation measures to further prevent dust emissions arising at the proposed development, it is considered that the proposed Quattro facility can be effectively operated without impacting the neighbouring operations of Costco and Virtus. The proposed dust monitoring plan, as detailed, should provide further security to the neighbouring operations in terms of on-going monitoring of the proposals.

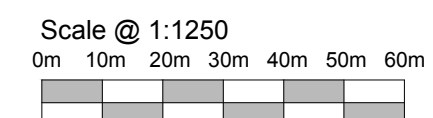
APPENDIX 1

SITE PLANS



LEGEND:

- ① Recycling plant (Refer to separate drg)
- ② Building for Incoming waste
- ③ Concrete batching plant (Refer to separate drg)
- ④ Material stockbays canopy and automated sprinkler system installed (10m c/c) to edge of canopy to assist with dust mitigation.
- ⑤ 8m easement for future foul sewer LBH (no build zone)
- ⑥ 'IN' and 'OUT' weighbridges with office
- ⑦ Office and mess facilities
- ⑧ Car parking (50 spaces)
- ⑨ Covered cycle store (20 cycles) with provision for 1 No adapted cycle
- ⑪ Area of operation for mobile dust suppression spray unit (hatched area)
- ⑫ Sleeper and steel wall as per attached photo. 500mm high concrete stub with sleeper and steel 3.0m high built from concrete wall. Wind supports required at relevant intervals. Automated sprinkler system installed (10m c/c) to top of wall to assist with dust mitigation.
- ⑬ Wheelwash
- ⑭ 'Sorted' waste out area
- ⑮ Building for outgoing waste

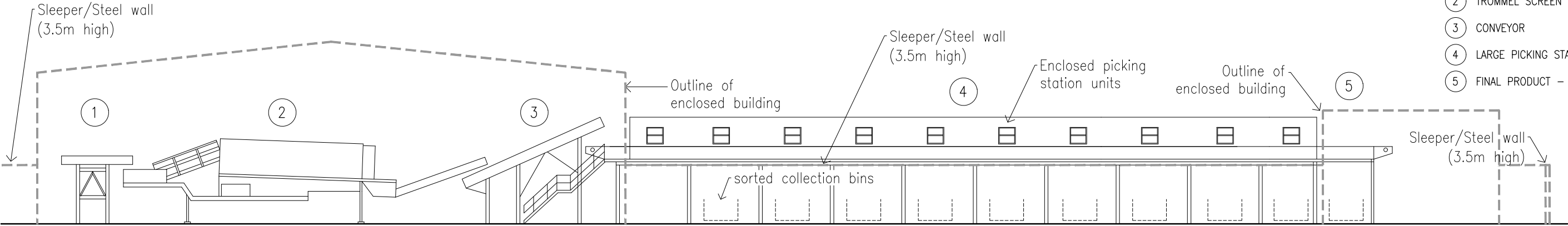


C	Minor adjustment	PR	27.03.17
B	Minor adjustments	PR	27.03.17
A	Minor adjustments	PR	24.03.17
Rev	Description	By	Date

PROJECT: SOUTHALL LANE, HAYES UB2 5XJ			
TITLE: SITE LAYOUT PLAN			
THE STABLES CANNONS MILL LANE BISHOPS STORTFORD HERTFORDSHIRE CM23 2BN TELEPHONE: 01279 465900 FACSIMILE: 01279 465999 GENERAL@MARKSHEELEY.CO.UK			
CONSULTING STRUCTURAL AND CIVIL ENGINEERS			

Scale:	As Shown	Sheet:	A3	Status:	P	REVISION	C
Drawn:	PR	23.03.17	DRG. No. H11930-11				
Checked:	GN	23.03.17					
Auth:	GN	23.03.17					

- LEGEND
- ① SCREEN AND CONVEYOR
 - ② TROMMEL SCREEN
 - ③ CONVEYOR
 - ④ LARGE PICKING STATION (10 units)
 - ⑤ FINAL PRODUCT – END OF LINE



RECYCLING PLANT SOUTH (FRONT) ELEVATION
1:250



TROMMEL SCREEN + CONVEYOR

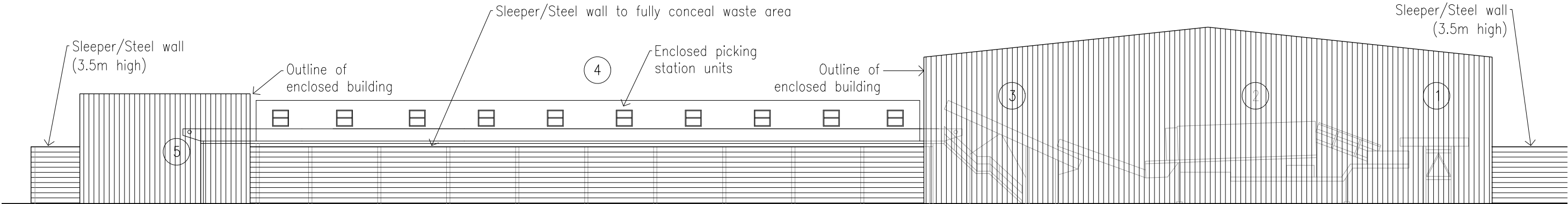


LARGE PICKING STATION

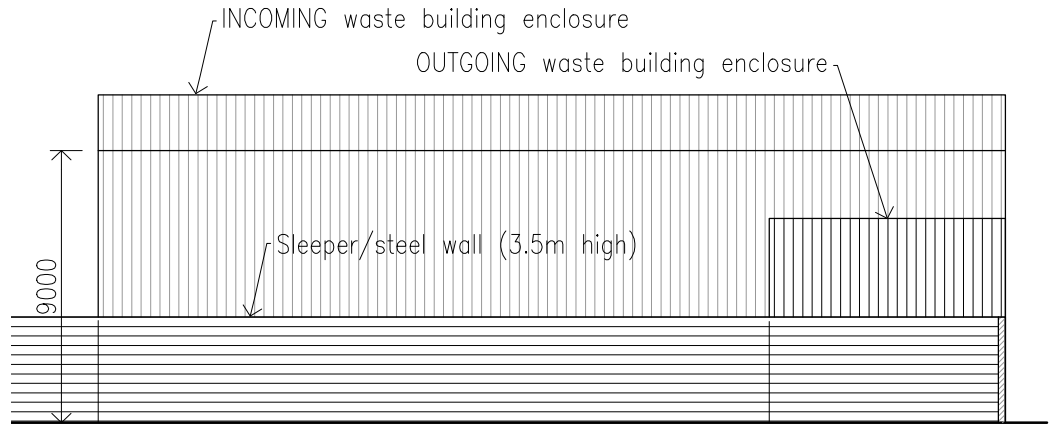


END OF LINE

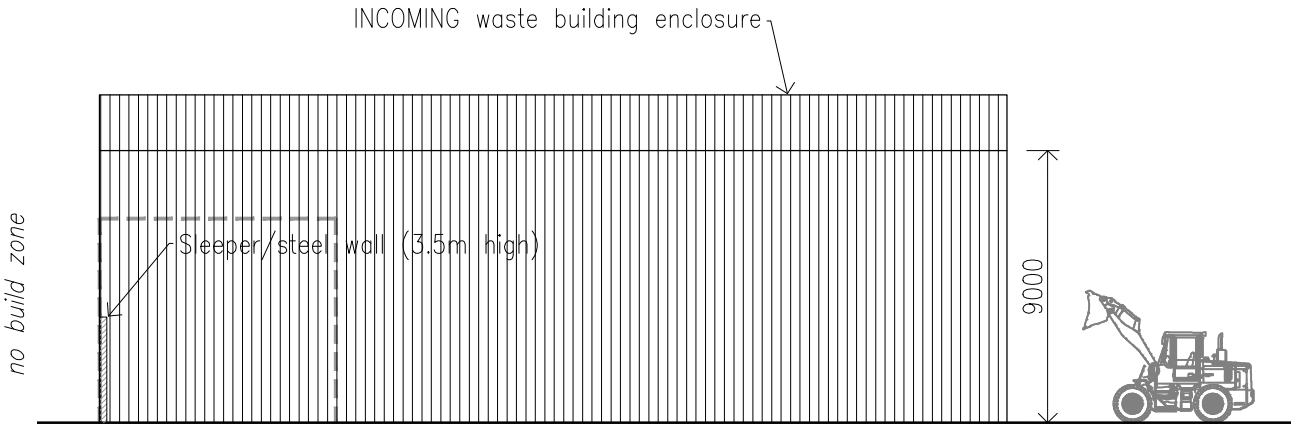
Enclosed building



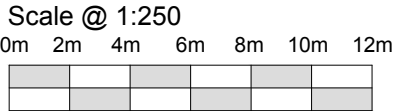
RECYCLING PLANT NORTH (REAR) ELEVATION
1:250



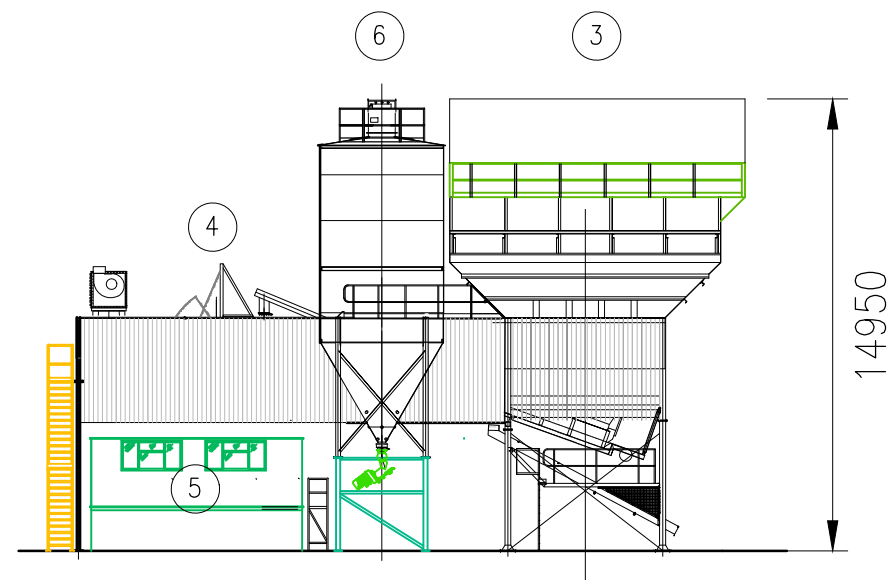
RECYCLING PLANT EAST (SIDE) ELEVATION
1:250



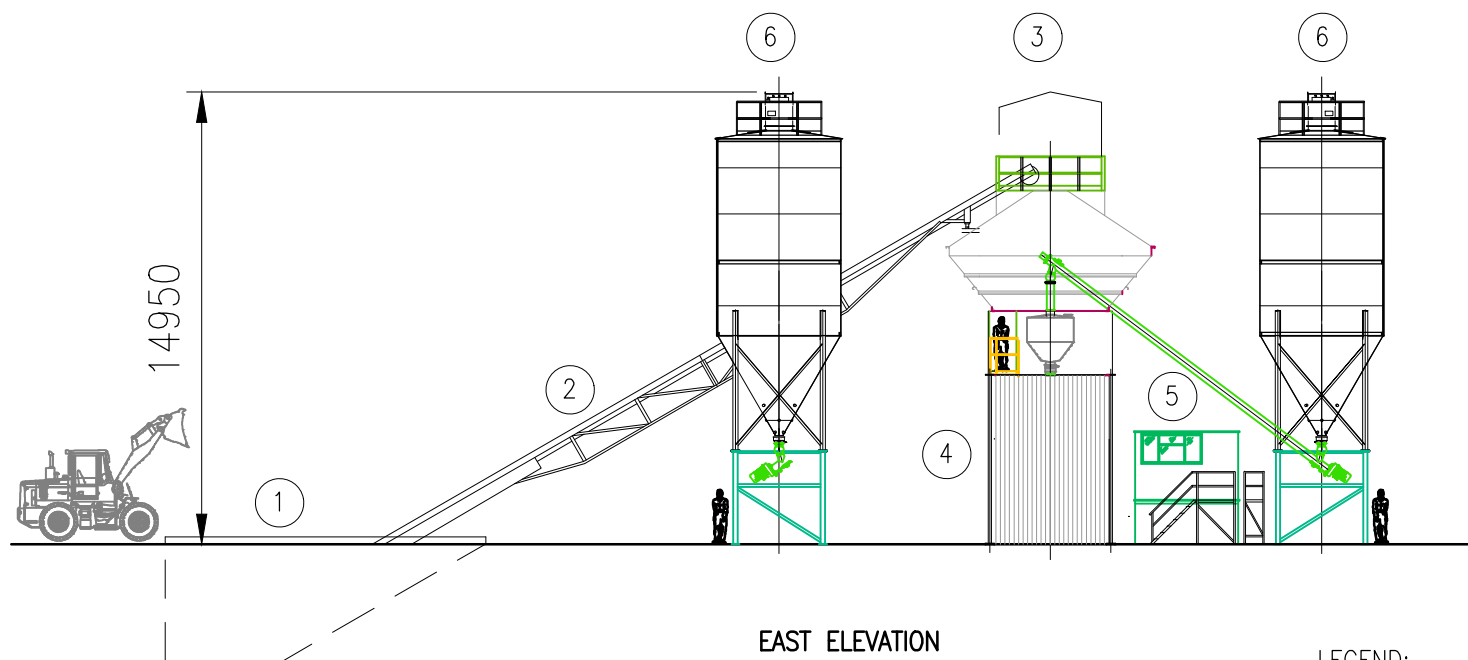
RECYCLING PLANT WEST (SIDE) ELEVATION
1:250



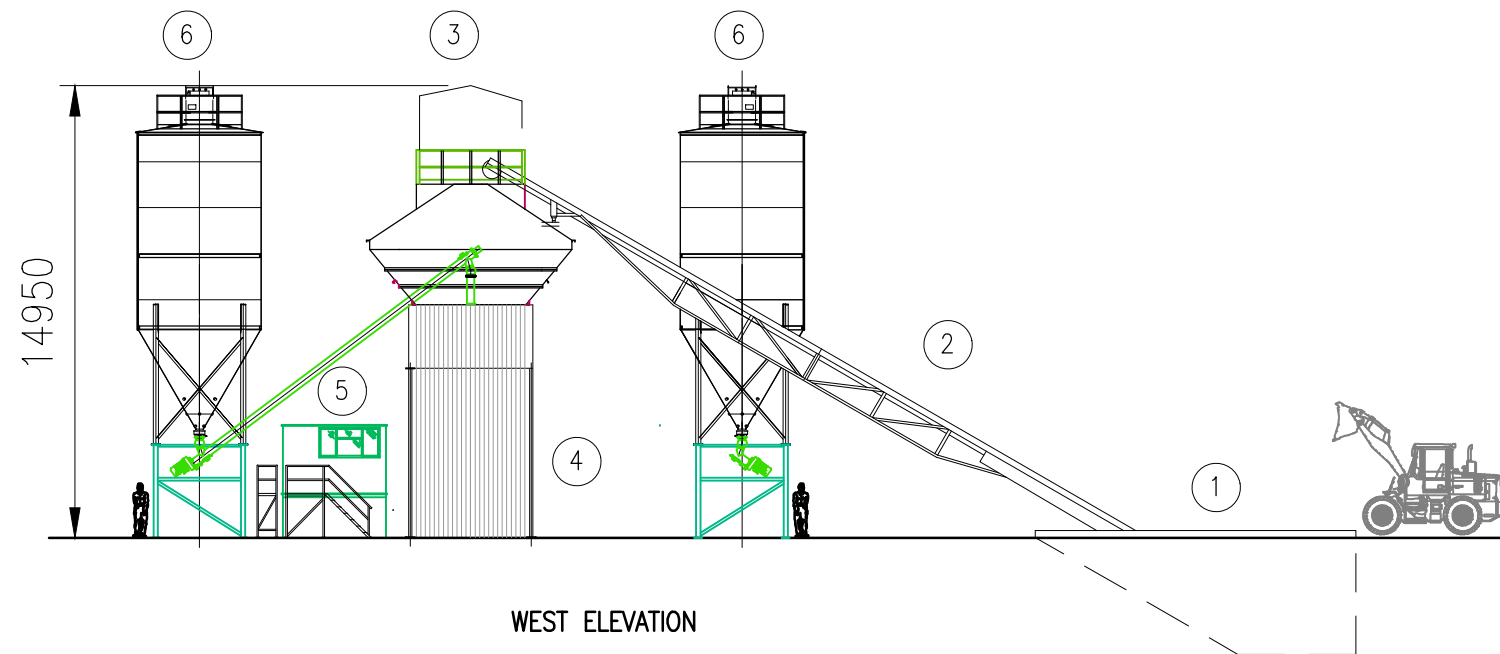
A	Clarifications/adjustments	PR	27.03.17
Rev	Description	By	Date
QUATTRO PROJECT: SOUTHALL LANE, HAYES UB2 5XJ TITLE: RECYCLING PLANT ELEVATIONS MARKS HEELEY THE STABLES CANNONS MILL LANE BISHOPS STORTFORD HERTFORDSHIRE CM23 2BN TELEPHONE: 01279 465900 FACSIMILE: 01279 465999 GENERAL@MARKSHEELLEY.CO.UK CONSULTING STRUCTURAL AND CIVIL ENGINEERS			
Scale:	As Shown	Sheet:	A3
Drawn:	PR	23.03.17	DRG. No.
Checked:	GN	23.03.17	H11930-12
Auth:	GN	23.03.17	
Status:	P	REVISION	A



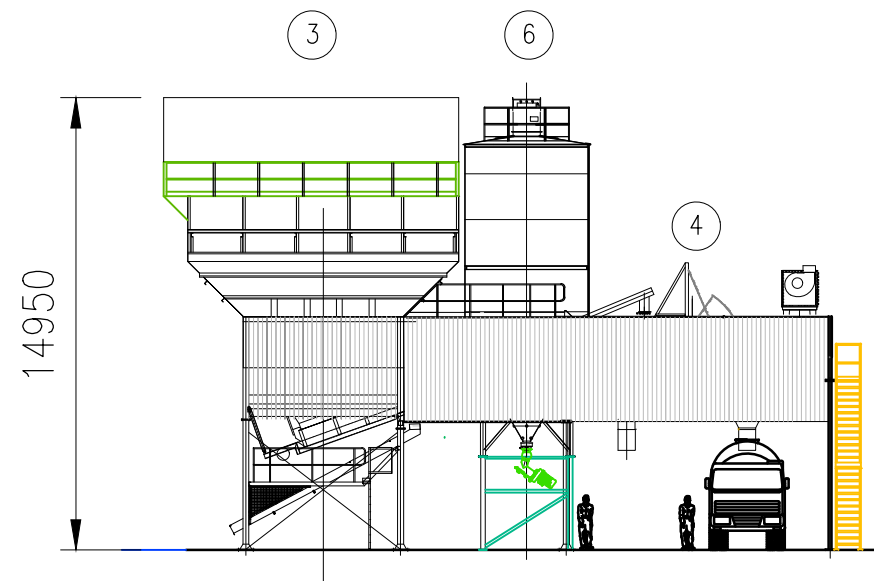
NORTH ELEVATION



EAST ELEVATION



WEST ELEVATION

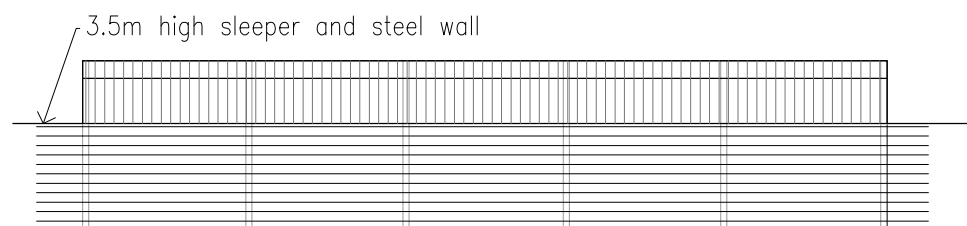


SOUTH ELEVATION

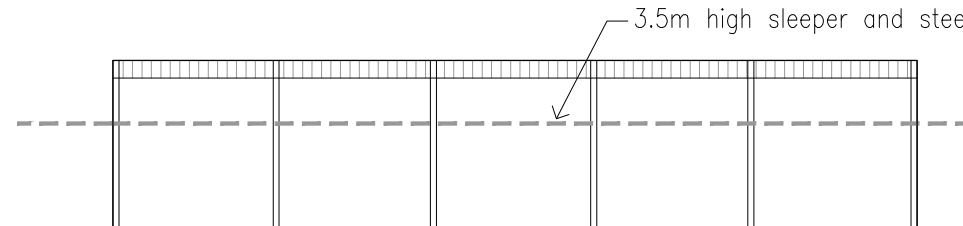
LEGEND:

- ① Ground feed hopper
- ② Radial conveyor
- ③ Overhead aggregate storage
- ④ Mixer and loading point
- ⑤ Batch cabin
- ⑥ Cement silo

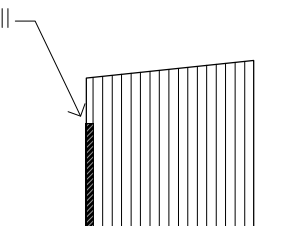
BATCHING PLANT ELEVATIONS
1:250



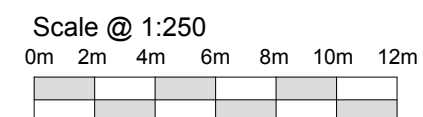
AGGREGATE BAYS WEST (REAR) ELEVATION
1:250



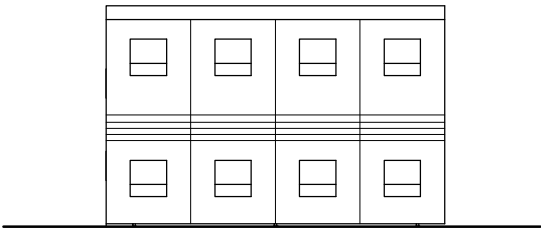
AGGREGATE BAYS EAST (FRONT) ELEVATION
1:250



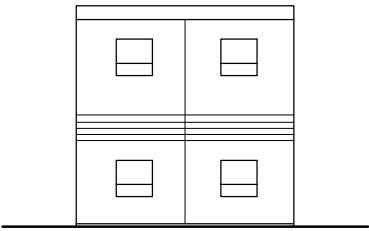
AGGREGATE BAYS SOUTH
(SIDE) ELEVATION
1:250



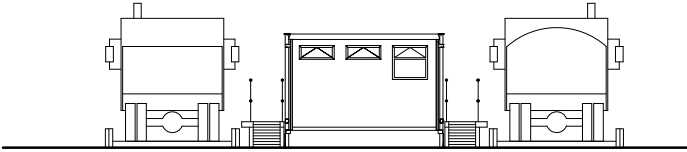
A	Drawing adjustments	PR	27.03.17
Rev	Description	By	Date
QUATTRO PROJECT: SOUTHALL LANE, HAYES UB2 5XJ TITLE: BATCHING PLANT and AGGREGATE BAYS ELEVATIONS			
MARKS HEELEY THE STABLES CANNONS MILL LANE BISHOPS STORTFORD HERTFORDSHIRE CM23 2BN TELEPHONE: 01279 465900 FACSIMILE: 01279 465999 GENERAL@MARKSHEELEY.CO.UK CONSULTING STRUCTURAL AND CIVIL ENGINEERS			
Scale:	As Shown	Sheet:	A3
Drawn:	PR	23.03.17	DRG. No.
Checked:	GN	23.03.17	H11930-13
Auth:	GN	23.03.17	
Status:	P	REVISION	A



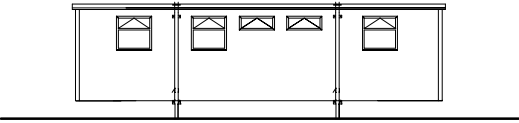
NORTH ELEVATION



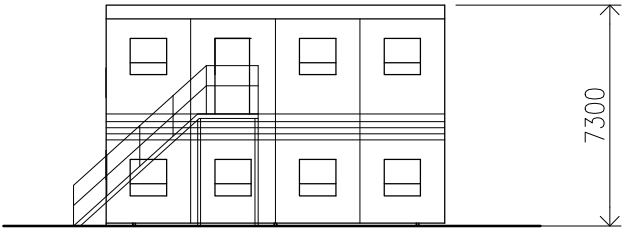
EAST ELEVATION



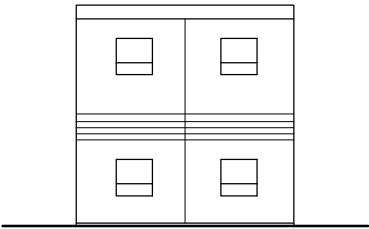
NORTH ELEVATION



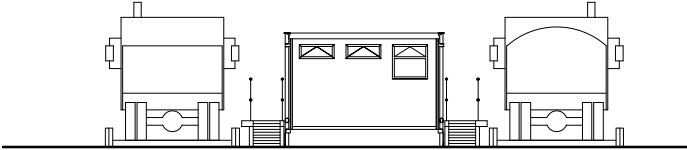
EAST ELEVATION



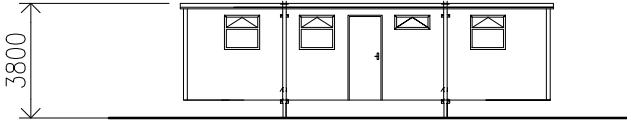
SOUTH ELEVATION



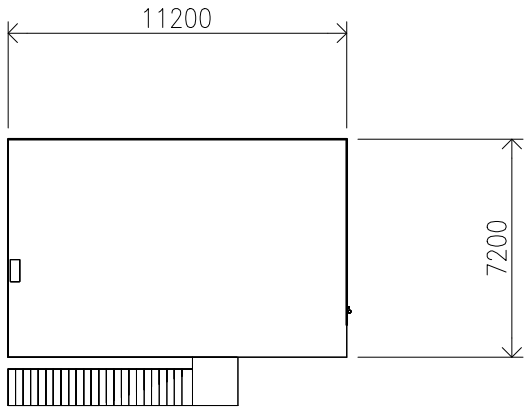
WEST ELEVATION



SOUTH ELEVATION

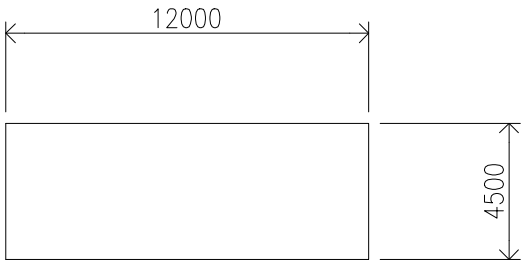


WEST ELEVATION



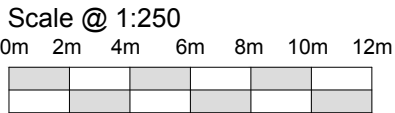
ROOF PLAN

OFFICE AND MESS FACILITIES
1:250



ROOF PLAN

WEIGHBRIDGE OFFICE
1:250



A	Minor clarifications provided					PR	27.03.17
Rev	Description					By	Date



PROJECT: SOUTHALL LANE, HAYES
UB2 5XJ

TITLE: OFFICE ELEVATIONS

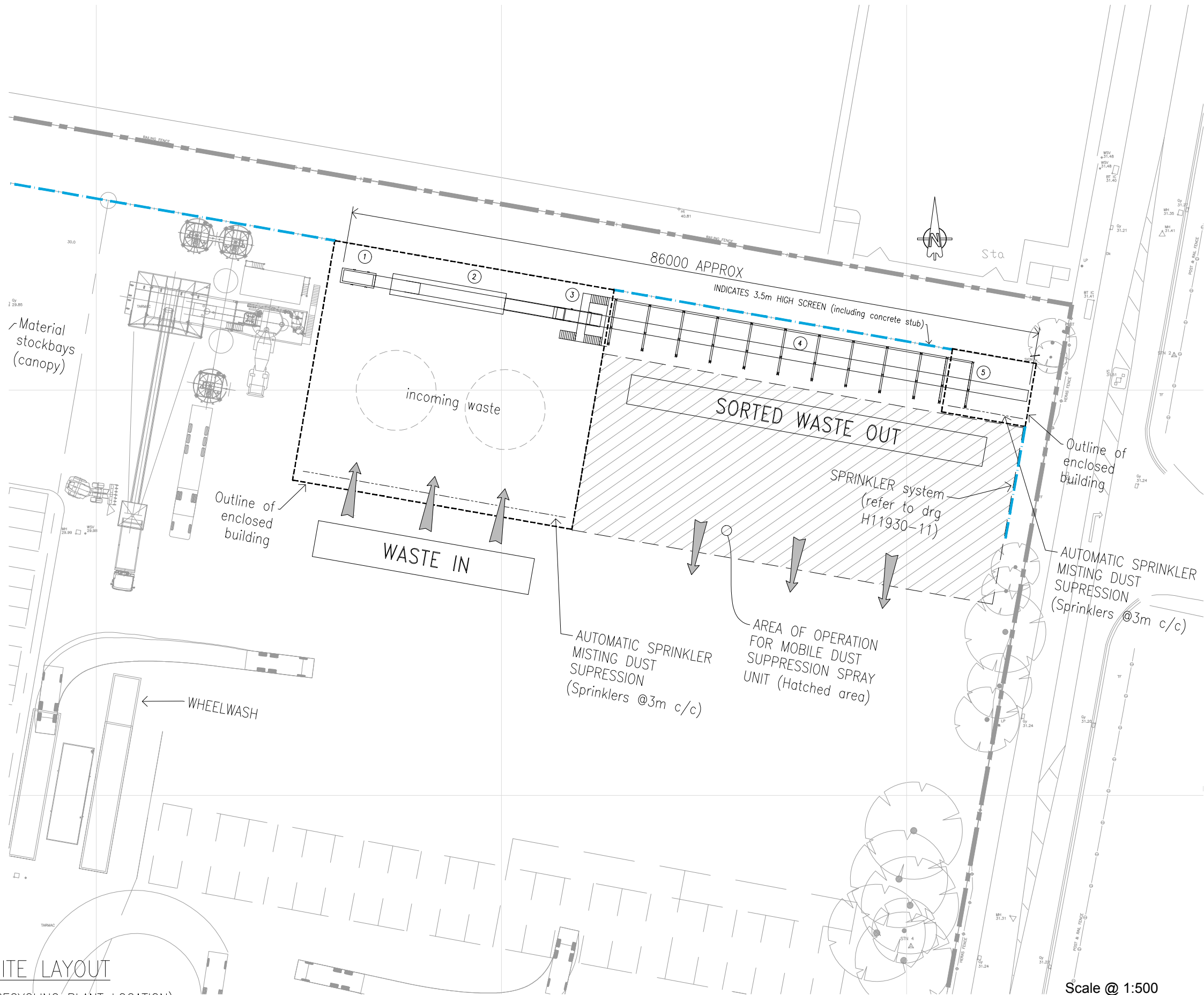


THE STABLES
CANNONS MILL LANE
BISHOPS STORTFORD
HERTFORDSHIRE CM23 2BN
TELEPHONE: 01279 465900
FACSIMILE: 01279 465999
GENERAL@MARKSHEELEY.CO.UK

©

CONSULTING STRUCTURAL AND CIVIL ENGINEERS

Scale:	As Shown	Sheet:	A3	Status:	P	REVISION	A
Drawn:	PR	23.03.17	DRG. No. H11930-14				
Checked:	GN	23.03.17					
Auth:	GN	23.03.17					



- LEGEND
- 1 SCREEN AND CONVEYOR
 - 2 TROMMEL SCREEN
 - 3 CONVEYOR
 - 4 LARGE PICKING STATION (10 units)
 - 5 FINAL PRODUCT – END OF LINE

SITE LAYOUT
(RECYCLING PLANT LOCATION)
1:500

Rev	Description	By	Date
C	Note added	PR	27.03.17
B	Minor adjustments	PR	27.03.17
A	Minor adjustments	PR	24.03.17

QUATTRO

PROJECT: SOUTHALL LANE, HAYES UB2 5XJ

TITLE: RECYCLING PLANT LAYOUT

MARKS HEELEY
CONSULTING STRUCTURAL AND CIVIL ENGINEERS

THE STABLES
CANNONS MILL LANE
BISHOPS STORTFORD
HERTFORDSHIRE CM23 2BN
TELEPHONE: 01279 465900
FACSIMILE: 01279 465999
GENERAL@MARKSHEELEY.CO.UK

Scale:	As Shown	Sheet:	A3	Status:	P	REVISION	C
Drawn:	PR	23.03.17	DRG. No.				
Checked:	GN	23.03.17	H11930-100				
Auth:	GN	23.03.17					

APPENDIX 2

PARTICULATE MONITORING



S.I. ENVIRONMENTAL

"Helping To Make Your Workplace Safer"

Air Monitoring
H&S Consultancy

Workplace Noise Monitoring
Local Exhaust Ventilation Tests

PM₁₀ PARTICULATE MATTER SURVEY
PARTICULATE MONITORING REPORT
QUATTRO (UK) LTD.
LIONEL ROAD WASTE TRANSFER SITE

Client:

Mr D Ruddle
Environmental Compliance Officer
Quattro (UK) Ltd
Regency Street
Off Victoria Road
Park Royal
London
NW10 6NR

Report to: david.r@quattroukltd.co.uk

Report Number: SI/0135/0416/PM/0001

Revision Number: 0

Prepared by:

Neil Fenwick

Authorised by:

Carl Renshaw

Date of Issue: 07 February 2017

Chapel House, 65 The Hill, Kirkby-In-Ashfield, Nottingham, NG17 8JR

Telephone: **01623 473 232**

Email: **info@sienvironmental.co.uk**

Website: **www.sienvironmental.co.uk**

Registered in England No: 4071466

VAT Number: 763 7786 76

Contents

1.0	INTRODUCTION	2
2.0	SITE DETAILS	2
3.0	MONITORING STRATEGY	3
4.0	SITE ACTIVITIES	4
5.0	WEATHER	4
6.0	RESULTS	5
7.0	DISCUSSION	6
APPENDIX I		6
PHOTOGRAPHS		
APPENDIX II		8
SAMPLING INSTRUMENT LOCATIONS		
APPENDIX III		9
LABORATORY UKAS TEST REPORT		

1.0 INTRODUCTION

- 1.1 A request was received from Mr David Ruddle, Environmental Compliance Officer, for SI Environmental Ltd to carry out a PM₁₀ particulate matter monitoring survey at the waste transfer station operated by Quattro (UK) Ltd at Lionel Road, Brentford, TW8 0JA.
- 1.2 The results obtained from the survey will provide background information in support of an application for an Environmental Permit for a Waste facility; due to relocation to a new site (which previously housed a waste disposal facility).
- 1.3 The new site will be based in Horn Lane, and lies within the boundary of a local authority designated as an Air Quality Management Area (AQMA).
- 1.4 Due to time limitations, it was arranged to take three PM₁₀ airborne particulate matter samples over a 48-hour period between 26 and 28 April 2016.

2.0 SITE DETAILS

- 2.1 The Lionel Road site is a non-hazardous waste transfer station. Waste is transported to site by road; with an average of around 800 vehicle loads per week. Of these, approximately 60% are transported by large vans, with the remainder from skips and articulated lorries.
- 2.2 There are seven vehicles present on site to facilitate sorting and movement operations, these are:
 - ▲ 3 mechanical shovels (primarily used for loading and transporting aggregates); and,
 - ▲ 4 mechanical diggers (primarily used for waste separation and loading).
 - ▲ 1 shredding machine (primarily used for shredding wood, located near to aggregate bays).

Two 'Trommel Screens' are also in use on site.

- 2.3 A number of dust control measures are in place on site. These include:
 - ▲ All lorries and skips delivering waste to site are sheeted.
 - ▲ A water bowser is employed to suppress dust on concrete surfaces.
 - ▲ A wheel-wash is located at the site exit and is used for all vehicles leaving site.
 - ▲ A mandatory speed limit of 5 mph is in place on site.
 - ▲ Mobile water mist blowers are in on site for use in damping down dust produced in localised areas during significant movements of dry materials or during long periods of dry weather (see Figure 4, Appendix I).

3.0 MONITORING STRATEGY

- 3.1 Arrangements were made to collect PM₁₀ particulate samples using AirMetrics MiniVol TAS tactical air samplers with PM₁₀ sampling heads, operating at a flow rate of 5 l.min⁻¹.



- 3.2 The samples were collected on to pre-weighed Whatman QMA 47mm Quartz membrane filters provided by a UKAS accredited laboratory. A blank filter was also supplied.
- 3.3 Following reconnaissance around site, it was agreed to locate three sampling pumps around the site boundary at the following locations:
1. Site entrance [Control Point]
 2. Aggregate bay [Upwind]
 3. WEEE (Number 5) shed [Downwind]

Photographs of the sampling locations are given in Appendix I.

- 3.4 The samplers were installed around site on Tuesday 26 April 2016 and decommissioned on Thursday 28 April 2016, following which the sample filters were withdrawn and forwarded to the laboratory for analysis.
- 3.5 Full details of the sampling and sample locations are given in Table 1 (Section 6) and the location plan given in Appendix II.

4.0 SITE ACTIVITIES

Activity on site was considered to be normal during the three days over which the samples were taken.

A summary of the number of deliveries, together with the nature of the materials and quantities tipped on site during the monitoring period are given below:

Date	Material	Number of deliveries	Quantity (Tons)
Tuesday 26 April 2016	Hard-core	13	44.01
	Non Hazardous Soil & Stones	0	00.00
	Mixed Construction & Demolition	54	122.53
	Utilities	13	154.44
Sub Total		80	320.98
Wednesday 27 April 2016	Hard-core	8	21.64
	Non Hazardous Soil & Stones	2	35.78
	Mixed Construction & Demolition	59	115.30
	Utilities	14	155.47
Sub Total		83	328.19
Thursday 28 April 2016	Hard-core	15	38.26
	Non Hazardous Soil & Stones	5	84.84
	Mixed Construction & Demolition	57	122.44
	Utilities	6	39.02
Sub Total		83	284.56
Overall total		246	933.73

5.0 WEATHER

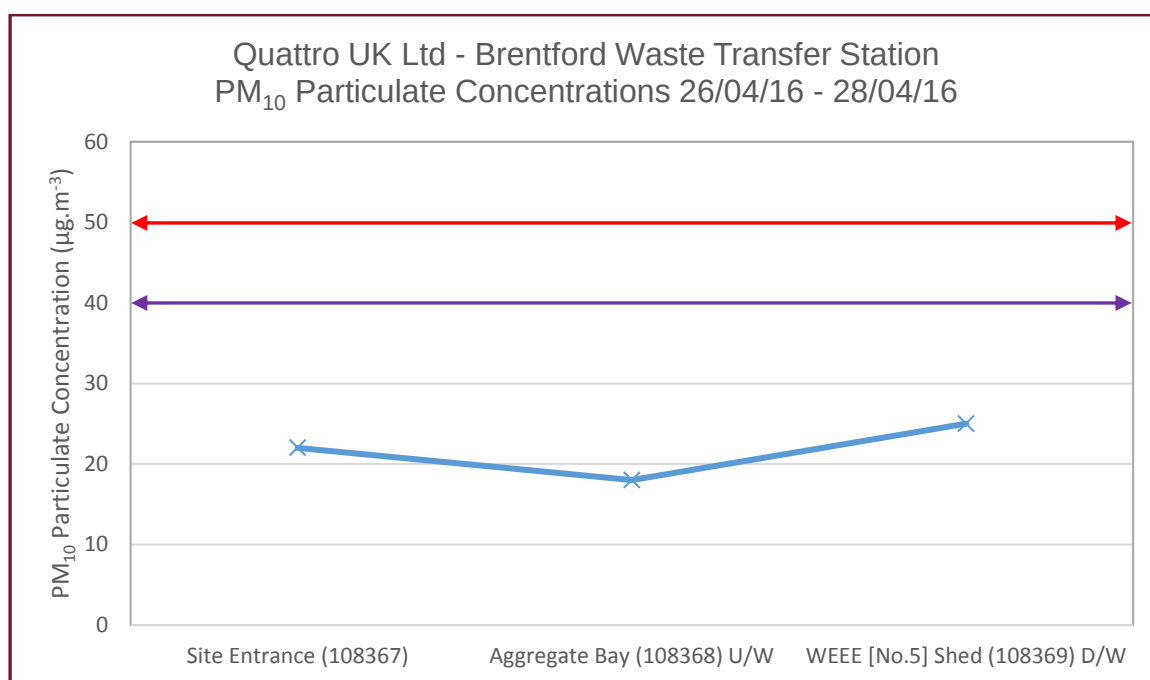
The local weather prevalent during the monitoring period is summarised below:

Date & Time Period		Prevailing Conditions	Maximum Temperature (°C)	Wind Direction	Maximum Wind Speed (mph)
Tuesday 26/04/2016	06:00 – 12:00 hrs	Fine, scattered clouds	8	NW	14
	12:00 – 18:00 hrs	Sunny with scattered clouds	9	N	13
	18:00 – 24:00 hrs	Fine, scattered clouds	6	N	12
Wednesday 27/04/2016	00:00 – 06:00 hrs	Clear	3	NW	9
	06:00 – 12:00 hrs	Sunny with scattered clouds	8	NNW	9
	12:00 – 18:00 hrs	Scattered showers	8	NW	8
	18:00 – 24:00 hrs	Broken clouds	9	NNW	9
Thursday 28/04/2016	00:00 – 06:00 hrs	Fog	3	W	3
	06:00 – 12:00 hrs	Sunny with scattered clouds	9	W	7
	12:00 – 18:00 hrs	Sunny	12	WSW	16

6.0 RESULTS

Table 1.

Sample Location	1. Site Entrance (Control)	2. Aggregate Bay (Upwind)	3. WEEE (№5 Shed) (Downwind)
Pump Serial Number	018425	018427	018428
Filter Reference	05301/02	05301/03	05301/04
Date Installed	26/04/2016	26/04/2016	26/04/2016
Time Switched on	12:30	13:11	12:45
Date Removed	28/04/2016	28/04/2016	28/04/2016
Time Switched off	11:15 hrs	11:53 hrs	11:36 hrs
Sample Duration (mins)	2436	2802	2811
Sample Pump Flow Rate (l.min ⁻¹)	5.0	5.0	5.0
Sample Volume (m ³)	12.180	14.010	14.055
Laboratory Sample ID Number	108367	108368	108369
Date Analysed	06/05/2016	06/05/2016	06/05/2016
Mass of PM ₁₀ Particulate (µg)	274	252	353
Airborne PM ₁₀ Particulate Conc. (µg.m ⁻³)	22	18	25



50µg.m⁻³ Limit for PM₁₀ Particulates 24 hour mean not to be exceeded more than 35 times per year
 40µg.m⁻³ Limit for PM₁₀ Particulates Annual mean
 Limits taken from Table 1.1 of defra publication Local Air Quality Management - Technical Guidance LAQM. TG(09) February 2009.

NB: Change in weight of batch blank filter: <5µg.

The laboratory UKAS Test Report pertaining to these results is included within Appendix III at the rear of this document.

7.0 DISCUSSION

The results from the survey carried out over an approximately 48-hour period between Tuesday 26 April 2016 and Thursday 28 April 2016 indicated concentrations of PM₁₀ particulate matter of 22, 18 and 25 µg.m⁻³ respectively at the three locations monitored; which are all below the limits specified in Table 1.1 of defra publication Local Air Quality Management - Technical Guidance LAQM. TG(09) dated February 2009.

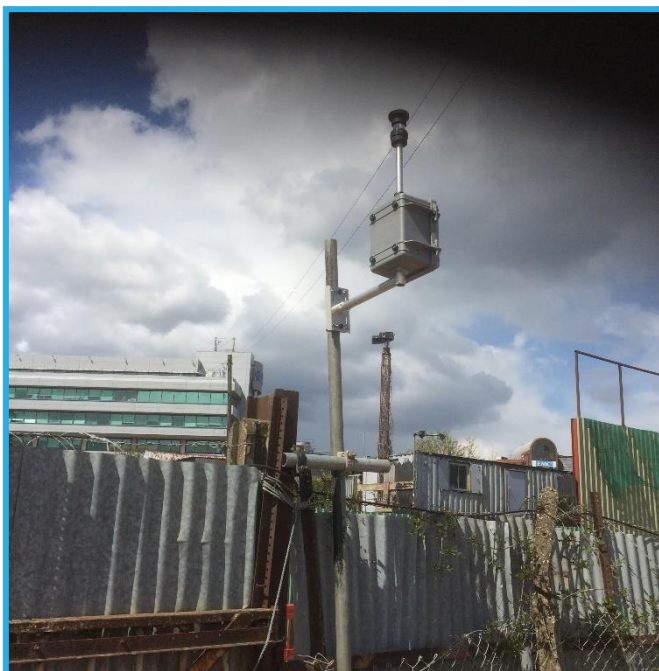
The results obtained from the site survey have been compared against results obtained from local air monitoring stations accessed via the London Air Quality Network (Londonair.org.uk) and although the samples have been collected gravimetrically the results compare favourably to the overall 2016 mean for the three adjacent areas regularly monitored using approved instrumentation. It should also be noted that the instruments referred to as 'Horn Lane, Ealing' in the table below are located adjacent to the Quattro premises.

	Location	Mean PM ₁₀ Concentration 2016 so far	Classification
Instrumentation	Ealing - Hanger Lane Gyratory	20	Roadside
	Ealing - Horn Lane	28	Industrial
	Ealing Horn Lane TEOM	27	Industrial
	Ealing - Southall	13	Urban Background
	Ealing Western Avenue	25	Roadside
	Ealing - Average	23	
	Richmond Barnes Wetlands	16	Suburban
	Richmond Castlenau	20	Roadside
	Richmond Average	18	
	Wandsworth Battersea	31	Roadside
	Wandsworth Lavender Hill (Clapham Jct)	25	Roadside
	Wandsworth Putney High Street	25	Kerbside
	Wandsworth Tooting High Street	27	Roadside
	Wandsworth Average	27	
	Area Average	23	
Gravimetric	Quattro Site Lionel Road Site Entrance	22	On site
	Quattro Aggregate Bay Upwind	18	On site
	Quattro Site (No 5 Shed WEEE)	25	On site
	Site Average	22	

It is therefore concluded that the transfer of waste processing activities would have a negligible effect on airborne PM₁₀ concentrations in the vicinity of the Horn Lane site.

A new dust management plan will be implemented at the Horn Lane site and its effectiveness evaluated by further environmental and particulate matter monitoring on site when routine operations are established; this will be supported by the on-going continuous instrumental monitoring located adjacent to the site.

APPENDIX I



**Figure 1. MiniVol Sampler 1
Site Entrance (Control)**



**Figure 2. MiniVol Sampler 2
Aggregate Bay (Upwind)**

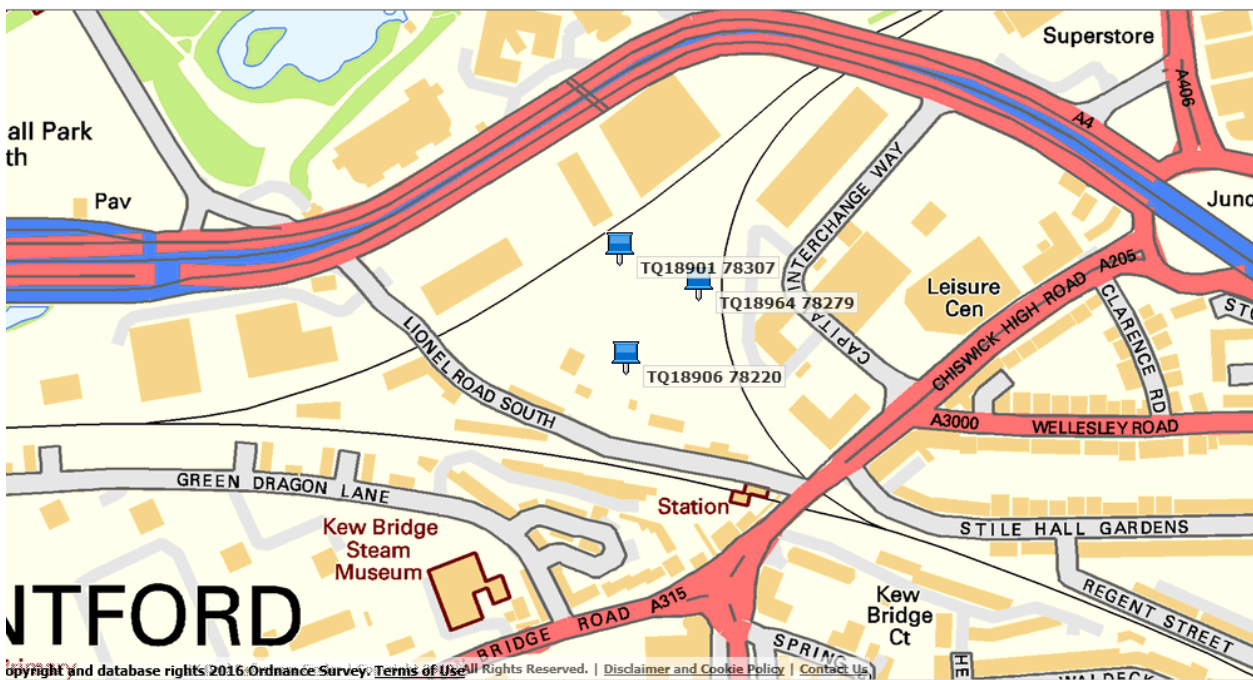


**Figure 3. MiniVol Sampler 3
WEEE (№5) Shed**



**Figure 4.
Mobile Water Spray for dust suppression**

APPENDIX II



APPENDIX III
LABORATORY TEST REPORT

APPENDIX 3

PARK ROYAL AND LIONEL ROAD OPERATING PERMITS



ENVIRONMENT
AGENCY

ENVIRONMENTAL PROTECTION ACT 1990

WASTE MANAGEMENT LICENCE

LICENCE REF No: : WML80595

FACILITY TYPE: Recycling Facility

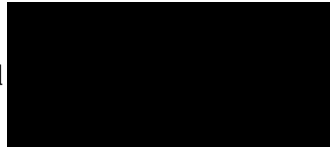
The Environment Agency, in pursuance of Part II of the Environmental Protection Act 1990, hereby grants a waste management licence authorising the **keeping and treating** of controlled waste on the land specified in Schedule 1 to this licence to **Quattro (UK) Limited (Registered No 2744918) of The Gatehouse, Cunard Road, Park Royal, London, NW10 6PN**, these persons being in occupation of the said land, the said licence being subject to the conditions specified in Schedule 2 to this licence.

In this licence the words and expressions contained in Schedule 2 shall have the meaning assigned to them therein.

SCHEDULE 1 - SPECIFIED LAND

The licence relates to the land identified as **Quattro (UK) Limited, Waste Reclamation and Recycling Centre, Regency street, Victoria Road, Park Royal, London, NW10 6NG** (hereinafter called the "site") shown outlined in red on Drawing Number AF6394/101, dated 17/04/00, entitled Licence Application Area and attached to this licence.

Signed



A. Chown
Acting Team Leader Environment Management

Date

10th July 2003

For Environment Agency official use only

YOUR ATTENTION IS DRAWN TO THE RIGHTS OF APPEAL DETAILED IN THE
NOTES AT THE END OF THIS LICENCE

Environment Agency - Apollo Court, 2 Bishop Square, St Albans Road West, Hatfield, Herts. AL10 9EX
Tel: 01707 632300 Fax: 01707 632500



ENVIRONMENTAL PROTECTION ACT 1990

WASTE MANAGEMENT LICENCE

Issued to

QUATTRO (UK) LIMITED

10 July 2003

LICENCE REF NO: WML80595

Schedule 2

1 General considerations

1.1 Specified waste management operations

1.1.1 No waste management operations shall be authorised by this licence unless:

- a** specified in and undertaken in accordance with the limitations in section 2.6 of the working plan and in the following table; or
- b** otherwise required by the conditions of this licence as being an integral part of those operations;

Table 1.1 Specified waste management operations

Specified Waste Management Operation	Permitted Waste Types which may be subject to the Specified Operation	Limits on Specified Waste Management Operations
D15: Storage pending, on this site any of the category "D" operations authorised under this column, or elsewhere than on this site, any of the operations listed in Part III of Schedule 4 of the 1994 Regulations, (excluding temporary storage, pending collection, on the site where it is produced). R13: Storage of waste consisting of materials intended for submission, on this site to any of the category "R" operations authorised under this column, or elsewhere than on this site, to any of the operations listed in Part IV of Schedule 4 of the 1994 Regulations, (excluding temporary storage, pending collection, on the site where it is produced).	All	- Maximum storage capacity 10,000 tonnes for waste offloaded at the site. - A free board of 1.0 metre shall be maintained below the top of the push wall at all times. Wastes of European Waste Catalogue 2002, with waste index 17 05 07 may be stored on site provided: - The waste is stored only in the vehicles in which it was brought to the site, and is not tipped; - There are no dangerous substances present in the waste loads in concentrations that would make the waste hazardous; - The total amount of waste of index code 17 05 07 on site at any one time does not exceed 100 tonnes;
D9: Physico-chemical treatment of waste not listed elsewhere in this table which results in final compounds or mixtures which are disposed of on this site by means of any of the category "D" operations authorised under this column, or elsewhere than on this site, by means of any of the operations listed in Part III of Schedule 4 of the 1994 Regulations. R2: Recycling or reclamation of organic substances which are not used as solvents R3: Recycling or reclamation of metals and metal compounds R4: Recycling or reclamation of other inorganic materials.	All solid wastes	Treatment consisting only of physical sorting or separation of waste into different components for disposal, recycling or reclamation.

Specified Waste Management Operations and Exempt Waste Management Operations

- 1.1.2 Where wastes are being brought onto the site for waste management operations which are exempt from licensing under the 1994 Regulations, then the wastes which are subject to the specified waste management operations shall be kept clearly segregated and identified from those wastes which are being kept on the site for the exempt waste management operations.

1.2 **Permitted wastes**

Permitted categories and types of wastes

- 1.2.1 No wastes other than those, which are categorised below in Table 1.2A shall be accepted at the site.

Table 1.2.A: Defined types of waste which may be accepted on the site (European Waste Catalogue 2002)

Index	Description	Maximum permitted Quantities (tonnes /year)
17 01 01	concrete	438,000 tonnes, and not more than 8423 tonnes per week, for all waste codes combined.
17 01 02	bricks	
17 01 03	tiles and ceramics	
17 01 07	mixtures of concrete, bricks, tiles, and ceramics other than those mentioned in 17 01 06	
17 02 01	wood	
17 02 02	glass	
17 02 03	plastic	
17 03 02	bituminous mixtures other than those mentioned in 17 03 01	
17 04 01	Copper, bronze, brass	
17 04 02	Aluminium	
17 04 03	Lead	
17 04 04	Zinc	
17 04 05	Iron and steel	
17 04 06	Tin	
17 04 07	Mixed metals	
17 04 11	Cables other than those mentioned in 17 04 10	
17 05 04	soil and stones other than those mentioned in 17 05 03	
17 05 06	dredging spoil other than those mentioned in 17 05 06	
17 05 07	track ballast containing dangerous substances	
17 05 08	track ballast other than those mentioned in 17 05 07	
17 08 02	Gypsum-based construction materials other than those mentioned in 17 08 01	
17 09 04	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02, and 17 09 03	
20 02 01	Biodegradable waste	
20 02 02	Soil and stones	
20 02 03	Other non-biodegradable wastes	
20 03 03	Street-cleaning residues	

Permitted quantities of wastes

- 1.2.2 The total quantity of waste accepted at the site per year shall not exceed 438,000 tonnes.

Exclusion of wastes with other specified characteristics

- 1.2.3 Notwithstanding the specification of permitted waste types under condition 1.2.1 above, wastes shall not be accepted at the site which have any of the following characteristics:

Table 1.2B. Excluded wastes of specified form and type

Waste Characteristic	Type
Form and type:	Consisting solely or mainly of dusts, powders or loose fibres; Wastes that are in a form which is either sludge or liquid.

1.3 **Hours of operation**

- 1.3.1 The permitted hours of operation for specified waste management operations authorised by this licence are covered by the planning permission, and are as stated in section 4.1 of the working plan.

1.4 **Staffing and understanding of requirements of licence conditions**

Minimum staffing and supervision

- 1.4.1 Whenever the site is open to receive or dispatch wastes, or is carrying out any of the specified waste management operations, it shall be supervised by at least one member of staff who is suitably trained and fully conversant with the requirements of the licence regarding:
- a** waste acceptance and control procedures;
 - b** operational controls;
 - c** maintenance;
 - d** record-keeping;
 - e** emergency action plans;
 - f** notifications to the Agency.

Availability of licence

- 1.4.2 A copy of this licence shall be kept available on site for reference when required by all site staff carrying out work under the requirements of the licence.

Understanding of licence

- 1.4.3 All site staff shall be, or shall work under the direct supervision of a member of staff who is, fully conversant with those aspects of the licence conditions which are relevant to their specific duties.

Attendance of Technically Competent Persons

- 1.4.4 Attendance of the technically competent person(s) at the site shall be recorded in the site diary on arrival and departure.

1.5 **Changes in technically competent persons**

- 1.5.1 Any changes in the technically competent management of the site and the name of any incoming person [together with evidence that such person has the required technical competence] shall be submitted to the Agency in writing within 5 working days of the change in management. Technically competent management and technical competence shall be as defined under section 74 of the Environmental Protection Act 1990 and Regulations 4 and 5 of the 1994 Regulations.

1.6 **Relevant convictions**

Notification of relevant convictions

- 1.6.1 In the event of the Licence Holder and/or any relevant person being convicted of any relevant offence and which is in addition to any already notified to the Agency, then full details shall be provided to the Agency within 14 days following sentencing, whether or not the conviction or sentence is subsequently appealed. Such details shall include, in respect of each relevant person (as defined in section 74(7) of the Environmental Protection Act 1990 or any subsequent amendments to that section), the nature of the offence, the place and date of conviction, and any fine or other penalty imposed.

Notifications of appeals against convictions

- 1.6.2 In the event that the Licence Holder and/or any relevant person lodges an appeal against any such conviction or sentence, the Licence Holder shall notify the Agency of this within 14 days of the lodging. The Licence Holder shall notify the Agency of the results of that appeal, within 14 days of the appeal being decided.

1.7 **Amendments to working plan and supporting information**

Amendments to working plan requiring prior consent from the Agency

- 1.7.1 The Licence Holder shall give the Agency prior notice in writing of any proposed change to those sections of the working plan which are specified in Table 1.7 below, and to any appendices, drawings and figures which are referenced in those sections.

Table 1.7 Sections of the working plan requiring prior consent for amendments

Number and Heading of Working Plan Sections And Appendices	Sections, Subsections and Appendices requiring Prior consent for Amendments
Specified Waste Management Operations	2.6
Site Operations	4

- 1.7.2 The notice shall be accompanied by a copy of the proposed changes, and by a written assessment of the effect that implementing the proposed change to the working plan would have on the risk posed by the site to human health and the environment.
- 1.7.3 The Licence Holder shall provide up to 6 additional copies of the proposed change and supporting risk assessment to the Agency, when required by the Agency in writing.
- 1.7.4 The proposed change to the working plan shall not be implemented unless the Agency has given its written consent to it. Following consent, the Licence Holder shall give the Agency prior written notification of the implementation date of the change, and from that date the changed section shall be deemed to be incorporated in the working plan in replacement of the previous version of that section.

Amendments to the working plan requiring prior notification to the Agency

- 1.7.5 Except where it is specified under condition 1.7.1 above that the amendment of specified sections of the working plan requires the prior consent of the Agency, the Licence Holder shall give the Agency not less than 7 days prior written notice of any change to the working plan and to any appendices, drawings and figures which are referenced from those sections.
- 1.7.6 The notice shall be accompanied by a copy of the specified changes.
- 1.7.7 The Licence Holder shall provide up to 6 additional copies of the proposed change to the Agency, when required by the Agency in writing.
- 1.7.8 Such changes to the working plan shall be deemed to be incorporated in the working plan and implemented on the date specified to the Agency in the amendment notification.

1.8 **Notification of change of operator's or holder's details**

1.8.1 The following information shall be notified in writing within 5 working days to the Agency where the Licence Holder is a registered company:

- i any change in the Licence Holder's trading name, registered name or registered office address;
- ii any steps taken with a view to the Licence Holder going into administration, entering into a company voluntary arrangement or being wound up;
- iii the operator at the time of issue of the licence and of any change in the operator or in the operator's trading name, address, registered name or registered office address (if different from the Licence Holder).

1.9 **Notification of preparatory works**

1.9.1 No preparatory works shall be undertaken until at least 7 days prior notice in writing has been given to the Agency of the intention to do so. The notification shall include details of what work is being done and when.

1.10 **Notification of commencement, cessation and
recommencement of waste storage operations**

Specified waste management operations

1.10.1 No specified waste management operation shall be carried out until at least 7 days prior notice in writing has been given to the Agency of the intention to commence carrying out the specified waste management operation.

Cessation and recommencement of specified waste management operations

1.10.2 In the event that the site ceases receiving wastes for longer than 21 days then within 7 days following the elapse of that time, the Licence Holder shall inform the Agency in writing of the date of cessation and of the planned date of recommencement. In the event that it is intended that the site shall recommence receiving wastes sooner than the notified date then the Licence Holder shall give the Agency not less than 7 days prior notice in writing.

1.11 **Notifications and submissions to Agency**

1.11.1 Except where otherwise specified, all notifications and submissions to the Agency under the requirements of these licence conditions:

- a shall be made in writing to the address specified by the Agency in writing at the time of issue of this licence, or as subsequently specified by written notification to the Licence Holder;
- b shall quote the licence reference number and the name of the Licence Holder.

2 Site engineering for pollution prevention and control

2.1 **Engineering site containment and drainage systems**

Provision and maintenance of site containment and drainage systems

- 2.1.1 The engineered site containment and drainage systems shall be designed, constructed, inspected, validated and maintained, and shall be fully documented and recorded, to be fit for purpose and meet the standards specified in Table 2.1 below.

Table 2.1 Site containment and drainage standards

Type of Site Surface and Drainage	Minimum Specified Standards of Design, Construction and Maintenance
a) Impermeable pavement, bunding and sills	Areas of impermeable pavement, bunding and sills shall be constructed and maintained so as to prevent fluids running off the pavement and the transmission of fluids through the pavement or joints.
b) Sealed drainage systems	Drainage to areas of impermeable pavement shall be provided by a sealed drainage system, which comprises a drainage system with impermeable components which does not leak and which will ensure that:- • no liquid will run off the pavement other than via the system; and • except where they may be lawfully discharged, all liquids entering the system are collected in a sealed sump. i) Sealed sumps shall be inspected no less frequently than daily and after rain, emptied when the collected liquids reach 80% of the capacity of the sump as measured using a dipstick or equivalent gauge, and constructed and maintained so as to collect and contain all liquids which run off the pavement; ii) Inspections and emptying of sealed sumps shall be recorded in the site diary. iii) Uncontaminated drainage from clean yard areas shall be kept separate and discharged to either surface water or sewer or watercourse or soakaway.
c) Fixed bays and other fixed containers	All fixed bays and other fixed containers used for the storage and treatment of wastes must be constructed and maintained to a standard, which is fit for purpose.
d) Storage areas for skips, drums and other mobile tanks and containers	All skips, drums and other mobile tanks and containers having individual capacities of greater than 10 litres which are used for the storage of wastes shall be constructed and maintained so that they do not leak any liquids contained in them.
e) Inspection and maintenance of engineered containment	All areas of hardstanding, impermeable pavement, sealed drainage systems, covered buildings, roofed areas, fixed bays and other containers, and storage areas for skips, drums and other mobile tanks and containers: i) shall be inspected no less frequently than monthly, to ensure the continuing integrity and fitness for purpose of their construction, and the inspection and any necessary maintenance shall be recorded in the site diary; and ii) in the event of any damage occurring which breaches the integrity of the engineered containment so that it no longer meets the specified standards, the Licence Holder shall cease importing waste into or treating waste in the affected area, shall notify the Agency immediately, and shall not recommence importing waste into or treating waste in the affected area until it has been repaired to a standard at least as good as the original specification.

Construction quality assurance of existing site containment and drainage systems

- 2.1.2 No wastes shall be deposited, stored, treated or otherwise handled in any area for which a previously constructed and existing engineered site containment and drainage system is being used to meet the requirements of this condition unless:

- a** details of the identities, relevant experience and relevant qualifications of the suitably qualified Engineer who will be providing inspection and validation of the existing engineered site containment and drainage systems have been submitted in writing to the Agency and acknowledged in writing by the Agency;
- b** the engineered site containment and drainage system for that area has been inspected by the designated Engineer and has been maintained or improved, in accordance with their recorded advice, to be fit for purpose in that :
 - i** areas of impermeable pavement are laid to take weight of relevant vehicles, plant and equipment without cracking or breaking; and
 - ii** areas of impermeable pavement are free from cracks which could increase permeability; and
 - iii** areas of impermeable pavement are resistant to mechanical, physical and chemical stresses to which they may be subjected; and
 - iv** areas of impermeable pavement fall towards the drainage system to prevent ponding; and
 - v** no liquid will run off areas of impermeable pavement other than via the drainage system; and
 - vi** the drainage system is sealed so that it does not leak and is capable of collecting and containing liquids draining from the impermeable pavement ; and
 - vii** liquid from the drainage system is disposed of to an approved discharge.

2.1.3 The existing engineered site containment and drainage system shall be maintained in accordance with the recommendations of the designated Engineer and the requirements of Table 2.1 above.

3 Site infrastructure

3.1 **Provision of site identification board**

- 3.1.1 No wastes shall be received at the site until an identification board has been provided at or near the site entrance.
- 3.1.2 The identification board shall be inspected at least once per week. In the event of damage or defect, the board shall be repaired or replaced within 3 working days.
- 3.1.3 The board shall be easily readable from outside the site entrance in daylight hours, and shall display the following information:
 - a** Site name and address;
 - b** Licence Holder name (company name, not individual name unless justified as necessary);
 - c** Operator name (company name, not individual name unless justified as necessary);
 - d** Licence number;
 - e** Emergency contact name and telephone number (for security reasons, personal names and home phone numbers should not be used except where no alternative is practicable);
 - f** Statement that the site is licensed by the Environment Agency;
 - g** Agency national numbers: 0845 933 3111 and 0800 807060 (or any other number subsequently notified in writing by the Agency);
 - h** Days and hours site is open to receive waste.

3.2 **Site security**

- 3.2.1 Site security systems shall be provided at all times during the subsistence of this licence, the objective of which shall be to prevent access by humans, and animals, which is not authorised either by the Licence Holder or under legal powers of entry. These shall be installed, operated and maintained, and shall be fully documented and recorded, in accordance with the requirements specified in Table 3.2:

Table 3.2 Site security system standards

Site security system	Specified standards
Timetable of provision	Site security shall be provided prior to commencement of the specified operations.
Design standards	This shall consist of security fence, or wall, or a combination of these, at least 1.8 metres high around the perimeter of the site, which shall meet the standards specified in British Standard BS1722 or an agreed alternative, and shall have a lockable gate to at least the same height and standard at the site access.
Operational standards	The site shall be kept closed and secure at all times when unattended.
Maintenance standards	The site security shall be fully inspected at the commencement of each working day. Any defects or damage shall be made secure by temporary repair by the end of the working day, and shall be repaired within 7 working days of the damage being detected. All inspections, defects, damage and repairs shall be recorded in the site diary.

Site operations

4.1 Control of mud and debris and loose waste

Prevention of mud and debris on road

4.1.1 Whenever the site is receiving or despatching wastes, measures shall be provided, operated and maintained with the objective of preventing the deposit or tracking of mud or debris arising from the site onto public areas outside the site, which shall include public highways and areas of public access.

4.1.2 All vehicles leaving areas of the site which are operational or upon which engineering works are being carried out shall, before leaving the site, be cleaned as necessary and shall be checked to ensure that they are clear of loose waste and that any waste is secure.

Remediation of mud and debris on road

4.1.3 In the event that mud, debris or waste arising from the site is deposited onto public areas outside the site, the following remedial measures shall be implemented immediately:

- a) the affected public areas outside the site shall be cleaned
- b) traffic shall be isolated from sources of mud and debris within the site to prevent further tracking of mud and debris, and measures shall be taken to clear any such sources as soon as practicable.

4.2 Leaks and spillages

Potentially polluting leaks and spillages from vehicles, plant and equipment

4.2.1 All vehicles used on the site by the operator, and all plant and all equipment used on the site in connection with specified waste management operations, shall be operated and maintained with the objective of preventing potentially polluting leaks and spillages of wastes.

Potentially polluting leaks and spillages from skips, drums and other mobile containers

4.2.2 Each skip, drum or other mobile container used to hold wastes which consist of or contain potentially polluting liquids, sludges or powders, [or other potentially polluting materials which are to be used in combination with those wastes in the specified waste management operations] shall be:

- a** loaded and unloaded in accordance with the handling procedures specified in Table 4.2;
- b** filled and emptied in accordance with the filling and emptying procedures specified in Table 4.2;

- c** clearly and unambiguously labelled regarding its contents, unless the contents are clearly identifiable by visual inspection;
- d** inspected and maintained according to the maintenance schedules and procedures specified in Table 4.2, which shall be fully documented and recorded;
- e** in the event of damage or deterioration to a container that is, or is likely to cause, a leak, that container shall be repaired or replaced immediately.

Control and remediation of leaks and spillages

- 4.2.3 In the event of any potentially polluting leak or spillage occurring on site, documented control and remediation procedures shall be implemented immediately and recorded, and shall meet the standards specified in Table 4.2 below.

Table 4.2 Standards for prevention and control of leaks and spillages

Action	Specified standards
a) Loading and unloading skips, drums and other mobile containers	i) Loading and unloading of containers shall be supervised at all times by a member of staff. ii) Lids/ caps/ bungs or other closures shall be in place during loading/ unloading. iii) Loading/ unloading shall be carried out in an area provided with engineered containment of the type required for that waste under condition 4.6, and of the standard of containment specified under condition 2.1.
b) Filling and emptying drums and other mobile containers	i) Filling and emptying of containers shall be supervised at all times by a member of staff. ii) Lids/ caps/ bungs or other closures shall be in place at the end of filling iii) Containers shall not be filled beyond their operational capacity. iv) Filling and emptying shall be carried out in a bunded area maintained in accordance with condition 2.1.2. v) Measurement of level/ void space shall be by physical dipping prior to loading.
c) Inspection, maintenance and repair of drums and other mobile containers	i) Containers shall be inspected daily for leaks. ii) Containers found to be leaking either shall be immediately transferred to a larger over-container or shall have their contents immediately transferred to an alternative container.
d) Control and remediation of leaks and spillages	i) Minor spillages shall be cleaned up immediately, using sand or proprietary absorbent to clean up liquids and placed in alternative containers. ii) Major spillages, which are causing or are likely to cause polluting emissions to the environment: • immediate action shall taken to contain the spillage and prevent liquid from entering surface water drains, water courses and unsurfaced ground; • the spillage shall be cleared immediately and placed in alternative containers; • the Agency shall be informed immediately.

4.3 **Fires on the site**

Prohibition of fires on site

4.3.1 No wastes shall be burned on the site.

Actions to be taken in the event of a fire

4.3.2 In the event of a fire on the site, notwithstanding the implementation of actions to suppress and extinguish the fire, the following actions shall be implemented immediately and recorded in the site diary:

- a** the Agency shall be informed immediately of the fire; and
- b** so far as practicable, contaminated site drainage shall be prevented from entering any surface water drain or water course or unsurfaced ground.

4.4 **Waste acceptance and control procedures**

Waste acceptance procedures

- 4.4.1 All wastes shall be received, inspected, accepted or rejected, and recorded in accordance with the standards specified in Table 4.4 below.

Waste control procedures

- 4.4.2 All wastes accepted at the site shall be handled, kept and recorded in accordance with the standards specified in Table 4.4 below.

Waste despatch procedures

- 4.4.3 All outgoing wastes shall be inspected, despatched and recorded in accordance with the standards specified in Table 4.4 below.

Table 4.4 Standards for waste acceptance and control procedures

Stage of Waste Handling	Specified standards
a) Waste inspection	All wastes received at the site: i) shall be inspected on receipt to confirm their description and composition against the relevant waste transfer note and other accompanying documentation. ii) shall be kept separate from and shall not be mixed with other wastes until they have been confirmed and recorded for acceptance at the site.
b) Waste control procedures: quarantine storage and rejection of wastes	i) Any items of non-permitted waste which are detected after acceptance at the site, shall be placed immediately in a designated quarantine container, and, where these are or appear to be special wastes, the Agency shall be informed immediately; ii) In the quarantine area, wastes shall be kept segregated from other wastes which are or are likely to be incompatible; iii) Quarantined wastes shall be removed from site within 7 days; iv) The maximum quantity of wastes kept in the quarantine storage area shall be 4.6m³ at any one time. v) A record shall be kept in the site diary of all rejected wastes and all wastes kept in quarantine storage.
c) Identification of wastes	Bays and containers shall be clearly defined and labelled to identify the wastes stored within them
d) Waste despatch procedures	All wastes despatched from the site shall be inspected prior to despatch to confirm their description and composition.
e) Incompatible wastes	Incompatible wastes that are likely, in combination with each other or with other material at the facility, to give rise to pollution of the environment or harm to human health outside the site, shall be clearly identified and kept physically separate in designated areas.

4.5 **Waste quantity measurement systems**

Means of measurement

- 4.5.1 All waste accepted at and despatched from the site shall be measured in accordance with either of the following requirements:

The weight of all wastes accepted at and despatched from the site shall be determined by means of a public weighbridge, or a weighbridge or scales located within the site. The weighbridge or scales used shall record quantities of wastes in tonnes to an accuracy of 0.01 tonnes.

4.6 **Storage of wastes with specified hazardous properties or forms**

- 4.6.1 Notwithstanding the specification of permitted waste types under condition 1.2, wastes displaying any of the hazardous properties or forms specified in Table 4.6 shall only be handled and/or stored on the site in accordance with the standards specified in Table 4.6 below.

Table 4.6 Standards for handling and/or storage of wastes with specified characteristics

Storage requirement	Specified standards
a) Solid wastes which when handled or stored are likely to generate significant quantities of dusts, fibres or particulates	These wastes only permitted if they are handled and stored either in: i) buildings or containers providing containment of aerial emissions of dusts and particulates; or ii) bays or roofed areas provided with a permanent water supply and water spraying or misting equipment, and with an impermeable pavement and a sealed drainage system; and the water spraying or misting equipment is used at all times when significant quantities of dusts, fibres or particulates are likely to be, or are being generated.
b) Odorous wastes, including wastes which are likely to be odour producing during storage	i) These wastes only permitted if: • received in sealed containers and stored in sealed containers and in areas provided with impermeable pavement and sealed drainage; or • stored in covered buildings providing containment of aerial emissions; or • stored in bays provided with an impermeable pavement and sealed drainage. ii) These wastes shall be subject to monitoring in accordance with condition 5.2 and shall in any case not be stored for longer than 48 hours, unless otherwise agreed in writing with the Agency.
c) Solid wastes which are likely to produce polluting or contaminating run-off.	i) Inert wastes only permitted if stored in bays with either: • hardstanding and drainage that prevents run-off from the waste into adjacent surface water bodies or storm water drains; or • an impermeable pavement and sealed drainage. ii) Degradable Household, Commercial and Industrial wastes only permitted if stored in areas with impermeable pavement and sealed drainage and either: • received and stored in sealed containers; or • stored in covered shelters or roofed areas; or • stored in bays.
d) Combustible wastes	These wastes only permitted if stored in bays provided with an impermeable pavement and sealed drainage, and with access to fire fighting equipment.
e) Wastes which are likely to attract pests	These wastes shall be subject to monitoring in accordance with condition 5.3, and shall in any case not be stored for longer than 48 hours, unless otherwise agreed in writing with the Agency.
f) Wastes which are likely to attract scavengers	i) These waste only permitted if: • stored in closed or secure containers; or • stored in covered buildings providing security against scavengers, or • stored in bays provided with netting or fencing providing security against scavengers. ii) These wastes shall be subject to monitoring in accordance with condition 5.4.
g) Wastes which include light wastes or other wastes liable to give rise to litter	These wastes only permitted if: • received in sealed containers and stored in sealed containers and in areas provided with impermeable pavement and sealed drainage; or • stored in covered buildings providing containment of aerial emissions of litter; or • stored in bays provided with litter control netting or fencing.

4.7 **Removal of residual wastes from site**

- 4.7.1 In the event that no wastes are received on the site for 3 months and the Agency has reasonable grounds to believe that the importation of wastes will not be resumed, then, notwithstanding any operational limits on storage times of wastes specified in the other conditions of this licence, the licence holder shall ensure that all wastes remaining on the site shall be removed by the date specified by the Agency in writing. This shall include, where required by the Agency, cleaning of plant, equipment and engineered containment used in the specified waste management operations, and emptying of any sealed sumps or interceptors.

5 Amenity management and reporting

5.1 **Control, monitoring and reporting of dusts, fibres and particulates**

- 5.1.1 Measures shall be implemented and maintained throughout the operational life of the site to control and monitor emissions of dusts, fibres and particulates from the site in accordance with the standards specified in Table 5.1 below

Table 5.1 Standards for monitoring and control of aerial emissions of dusts, fibres and particulates

a)	Monitoring of aerial emissions	Site staff supervising individual waste handling operations shall, during the carrying out of those operations, undertake visual monitoring of aerial emissions.
b)	Remedial action	i) On detection or notification of visible aerial emissions that are likely to be transported beyond the site boundary, immediate action shall be taken to stop the waste handling operations giving rise to the emission and to suppress the aerial emission from the waste. ii) The incident and the remedial action shall be recorded in the site diary.

- 5.1.2 All emissions to air from the specified waste management operations on the site shall be free from visible concentrations of dusts, fibres or particulates as are likely to cause pollution of the environment or harm to human health or serious detriment to the amenity of the locality outside the site boundary, as perceived by an authorised officer of the Agency.

5.2 **Monitoring and control of odorous emissions**

- 5.2.1 Measures shall be implemented and maintained throughout the operational life of the site to control and monitor emissions of odours from the site, in accordance with the standards specified in Table 5.2.
- 5.2.2 All emissions to air from the specified waste management operations on the site shall be free from odours at levels as are likely to cause pollution of the environment or harm to human health or serious detriment to the amenity of the locality outside the site boundary, as perceived by an authorised officer of the Agency.

Table 5.2 Standards for monitoring and control of emissions of odours

a) Monitoring of odorous emissions	Olfactory monitoring of aerial emissions from the site shall be carried out: • by the site manager or supervisor, at least twice a day, at the site boundary situated downwind of the waste operations, and shall be recorded in the site diary; and • by site staff supervising individual waste handling operations, during the carrying out of those operations.
b) Odorous emissions action plan	i) On detection or notification of aerial emissions of odour that are or are likely to be transported beyond the site boundary at such levels that they are likely to cause pollution of the environment or harm to human health or serious detriment to the amenity of the locality, immediate action shall be taken to stop the waste handling operations giving rise to the emission and to suppress the aerial emission from the waste. ii) The incident and the remedial action shall be recorded in the site diary.

5.3 Monitoring and control of pest infestations

5.3.1 Measures shall be implemented and maintained throughout the operational life of the site to control and monitor the presence of pests on the site, in accordance with the standards specified in Table 5.3. The objective of these measures shall be to prevent pest infestations that are likely to cause pollution of the environment or harm to human health or serious detriment to the amenity of the locality.

Table 5.3 Standards for monitoring and control of pest infestations

Specified standards	
a) Monitoring of pest infestations	An inspection of stored wastes for pest infestations shall be carried out at least at weekly intervals by the site supervisor, and shall be recorded in the site diary.
b) Pest infestations action plan	i) On detection or notification of pest infestations, immediate action shall be taken to secure the attendance of a professional pest control contractor, to eliminate the pest infestation. ii) The incident and the remedial action shall be recorded in the site diary.

5.4 Control of scavenging birds and other scavengers

5.4.1 Measures shall be implemented and maintained throughout the operational life of the site to control and monitor the presence of scavenging birds and other scavengers on the site, in accordance with the standards specified in Table 5.4. The objective of these measures shall be to prevent scavenging birds and other scavengers from gathering on operational areas or scavenging wastes in such numbers that are likely to cause harm to human health or serious detriment to the amenity of the locality.

Table 5.4 Standards for monitoring and control of scavenging birds and other scavengers

a) Monitoring of scavengers	Stored wastes which are likely to attract scavengers shall be routinely monitored for the presence of scavenging animals or flocks of scavenging birds, throughout the working day by the site supervisor.
b) Scavengers action plan	i) On detection or notification of scavenging animals or flocks of scavenging birds, immediate action shall be taken to: • remove or deter them from the site, and • isolate and secure the wastes attracting the scavengers against further scavenging. ii) The incident and the remedial action shall be recorded in the site diary.

5.5 **Control of litter**

- 5.5.1 Measures shall be implemented and maintained throughout the operational life of the site to prevent the escape of litter from the confines of the site.
- 5.5.2 In the event that litter does escape from the site, it shall be retrieved as soon as practicable and no later than 1 hour after the end of the working day.

6 Site records

6.1 Security and availability of records

Security of records

- 6.1.1 All records which are required to be made under the conditions of this licence shall be maintained and kept secure from loss, damage or deterioration, and shall be kept in accordance with the requirements specified in Table 6.1 below.

Availability of records

- 6.1.2 All records which are required to be made under the other conditions of this licence shall be made available for inspection at the place where they are kept immediately when required by an authorised officer of the Agency.

Table 6.1 Standards for keeping of site records

Site records	Specified standards
Wastes accepted at the site; Wastes rejected. Wastes despatched from the site; Site diaries.	1. All records shall be stored either: a) on paper in a secure cabinet or cupboard; or b) on computer disc with a back up copy. 2. Records shall be kept for a minimum of two years.

6.2 Records of waste movements

Recording of wastes accepted and removed

- 6.2.1 A record shall be kept of each load of waste accepted and each load of waste removed from the site. This record shall include the following details:
- a** Loads in:- Nature (solid, sludge or liquid), waste type as specified under condition 1.2, quantity (tonnes), date received, date accepted.
 - b** Loads out:- Nature (solid, liquid or sludge), waste type as specified under condition 1.2, quantity of waste removed(tonnes), date removed.

Summary records of wastes accepted and removed

- 6.2.2 A summary record of the waste types and quantities accepted and removed from the site shall be made for each quarter of the financial year and shall be submitted to the Agency within 1 month following the end of that quarter. The summary record shall be in the format detailed in Appendix B or otherwise subsequently agreed with the Agency in writing.

6.3 **Site diary**

- 6.3.1 A site diary shall be kept secure and shall be available for inspection at the site when required by an authorised officer of the Agency. This shall include a record of the following events, in accordance with the other conditions of this licence:

- a** construction work
- b** start and finish of daily waste management activities on site
- c** maintenance
- d** breakdowns
- e** emergencies
- f** problems with waste received and action taken
- g** site inspections and consequent actions carried out by the operator
- h** technically competent management attendance on site: the date and the time onto site and the time left site
- i** despatch of records to the Agency
- j** severe weather conditions
- k** complaints about site operations and actions taken
- l** environmental problems and remedial actions

- 6.3.2 Each record shall be completed within 24 hours of the relevant event.

6.4 **Periodic reporting of environmental performance**

- 6.4.1 The Licence Holder shall provide the Agency on an annual basis by 1st June each year, or such other time as is agreed in writing with the Agency, a report on the environmental performance of the site, which shall include the following information:

- a** an analysis and review of all complaints received during the year, and of actions taken;
- b** an analysis and review of all events causing the implementation of actions to control and minimise emissions or releases from the site, in accordance with these conditions;
- c** a review of the risk assessment and risk management systems for the site, taking account of the findings under **a** and **b**.

Interpretation

In these conditions and their interpretation, unless the context otherwise requires, the following terms have the specified meanings:

"accepted"

for waste being delivered to the site, shall mean accepted as waste input to the site for storage and/or processing and/or disposal under the specified waste management operations;

"authorised officer of the Agency"

means any person(s) authorised in writing by the Agency pursuant to section 108(1) of the 1995 Act to exercise any of the powers specified in subsection (4) of that section;

"consequences"

for **risk assessments** carried out within these conditions, means the adverse effects of harm as a result of realising a **hazard** which causes the quality of human health (other than health and safety of site staff or visitors to the site covered under the Health and Safety at Work Act 1974) or the environment to be impaired in the short or longer term.

"container"

means a container which does not permit either the ingress or egress of liquids, or the escape of dusts or wastes contained within it;

"engineered"

for works specified in these conditions, means carried out and completed using the relevant engineering process specified in these conditions;

"engineering"

for engineering works specified in these conditions, means the relevant process of design, construction or installation, quality assurance or validation or commissioning specified in these conditions;

"environmental targets or receptors"

for **risk assessments** carried out within these conditions, shall mean identified human and environmental populations or components, as specified in these conditions or otherwise agreed by the Agency within these conditions.

"groundwater"

means any water contained in underground strata;

"hazard"

means a property that in particular circumstances could lead to harm;

"immediately"

for carrying out of actions under the conditions, shall mean without delay and within a reasonable time, taking into account any more immediate direct action necessary to prevent or minimise risk to human health and the environment. For carrying out notifications to the Agency, shall also mean by the fastest effective means available (for example, telephone) and confirmed in writing within 1 working day (or such other time as may be agreed by the Agency within the conditions);

"inert waste"

means wastes which will not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm to human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant and in particular not endanger the quality of surface water and/or groundwater.

"maintenance"

for engineering maintenance specified in these conditions, means the process of inspection, testing, repair of the relevant engineering works specified in these conditions;

"probability"

means the quantified expression of chance, denoted either as:

- the ratio or percentage of the occurrence of a particular event as one among a number of possible events;
- or as the frequency of occurrence of a particular event in a given period of time;

"received"

for waste being delivered to the site, shall mean delivered to the site and undergoing the waste acceptance procedures, including storage of those wastes during those procedures prior to acceptance of the waste;

"release pathways"

for **risk assessments** carried out within these conditions, shall mean the routes by which defined **hazards** may potentially realise their **consequences**, defined in terms of releases or emissions from the site that go beyond the site containment or boundary via one or more of the following routes, either directly or indirectly: **Land; Groundwater, Surface water; Atmosphere;**

"relevant offences"

are offences within the meaning of regulation 3 of the Waste Management Licensing Regulations 1994 or any statutory provisions or regulations amending or replacing them;

"risk"

means a combination of the **probability** and **consequences** of occurrence of a defined **hazard**;

"risk assessment"

means the systematic identification, analysis, estimation and evaluation within a defined **scope** of the defined **risks** of a particular activity, operation, process or design, carried out and reported by suitably qualified or competent persons, using recognised quantified or semi-quantified methods and techniques.

Unless otherwise agreed by the Agency within these conditions, a risk assessment shall include and record the following:

- definition of the **hazards** associated with an activity, operation, process or design;
- assessment of the **probability** of those **hazards** occurring;
- determination of the potential **consequences** of those hazards for defined **environmental targets or receptors**, taking into account defined **release pathways** and defined protective measures;
- evaluation of the potential **magnitude** of those consequences and the **probability** of their occurrence;

"scope of risk assessment"

means the boundaries of the **risk assessment** and the **risks** to be assessed within those boundaries, as defined in the conditions or otherwise agreed by the Agency within the conditions;

"special waste"

has the meaning as defined by regulation 2 of the Special Waste Regulations 1996 or any statutory provisions or regulations amending or replacing them;

"specified waste management operations"

means the waste management operations authorised by condition 1.1 of this licence;

"surface water"

means any lake, pond, river or watercourse whether natural or artificial;

"the 1994 Regulations"

means the Waste Management Licensing Regulations 1994 and any statutory provisions or regulations amending or replacing them.

"the Agency"

means the Environment Agency;

"the Licence Holder"

means the Licence Holder specified in this licence or other person to whom the licence has been transferred in accordance with section 40 of the Environmental Protection Act 1990;

"the operator"

means a person who is in occupation of the site and has responsibility for carrying out day to day activities at the site;

"the site"

means the land, structures, plant and equipment to which this licence relates;

"time periods, e.g. annually, quarterly, monthly, per year, etc. "

Where periods are referred to in conditions, they shall be calculated in the following way:

- annually or per year: 1 April to 31 March;
- quarterly: 1 April to 30 June, 1 July to 30 September, 1 October to 31 December, 1 January to 31 March;
- monthly: calendar month;
- weekly: Monday to Sunday.

Where the issue of the licence does not coincide with the start of any of these periods, then any relevant limits for the first period shall apply pro rata;

"waste"

means controlled waste as defined in section 75(4) of the 1990 Act and the Controlled Waste Regulations 1992 or any statutory provisions or regulations amending or replacing them;

7 Appendices to conditions

Appendix B Format for summary records of wastes accepted and removed (Condition 6.2.2)

For Environment
Agency use only

Date received

Date processed

Local site licence number

WML No

80595

Original reference

ENVIRONMENT
AGENCY

Waste Return

Environmental Protection Act 1990

ENVIRONMENT AGENCY
APOLLO COURT
2 BISHOP SQUARE
ST ALBANS ROAD WEST
HATFIELD
HERTS.,
AL10 9EX

1 The period the return covers

1.1 The return period is tick one only

☐ Month☐ QuarterFrom to ☐ Year

- Use this form to tell us the type and quantity of controlled waste you have processed at each licensed facility within your site
- Please read through the whole form and guidance notes before you start filling anything in.
- Please send the completed form back to us at the address on the left by the return date specified on page 2 of the notes.

2 Landfill sites only (continued)

2.6 Was the site fully surveyed before 31 March in the current year

No ☐ Now go to question 2.7Yes ☐ Please tell us how the void space was calculated

Now go to question 2.8

2.7 How have you estimated the remaining void space?

For example visually or other method

2.8 Remaining life of site

Years

Now go to sections 3 and 4 on page 2

5 Declaration

Please make sure you have filled in all the sections that apply to you before signing this declaration.

I certify that the information in this return is correct to the best of my knowledge and belief.

I enclose ☐ continuation sheets

Signature

Name

Position

Phone

Date

6 Disclosure and data protection

The information you provide will be used by the Environment Agency to enable it to fulfil its regulatory and waste management planning responsibilities.

For full information on how the data in this form will be used please see the waste return guidance notes that come with the form.

2 Operator and site details

2.1 Site Operator

Site name

Quattro (UK) Ltd. Waste Reclamation and Recycling Centre

WML Number 80595

Site address

REGENCY STREET
PARK ROYAL
LONDON
NW10 6NG

Phone

E-mail

2.2 Type of facility see your waste management licence

Recycling facility

2.3 Was a weighbridge used?

No ☐Yes ☐

Please tell us the proportion weighed

Percentage

2.4 Are you operating a landfill site?

No ☒ go to section '3' Waste received on site' on page 2Yes ☐ go to section 'Landfill sites only', question 2.5

Landfill Sites only (as at 31 March in the current year)

2.5 Give the remaining void space covered by the licence

cubic metres

3 Waste material received on site

Please read the guidance notes 'How to fill in the form', and use the continuation sheet **WMS3** provided, or a copy of it, if you need to.

In the last column D = final disposal U = used on site S = special waste (a consignment note is needed for special waste). F = from another facility, for example a transfer station M = municipal biodegradable waste O = other biodegradable waste

Description of waste	Waste classification code	Origin*	State solid, powder, sludge, liquid gas	Weight in tonnes	Additional information					
					D	U	S	F	M	O
Total weight of material received on site:					tonnes					

4 Waste material removed from site

Please read the guidance notes 'How to fill in the form', and use the continuation sheet **WMS3** provided, or a copy of it, if you need to. In the last column, facility types could include 'incinerator, transfer station, landfill, treatment, reprocessing, recycling'.

Description of waste	Waste classification code	Destination*	State solid, powder, sludge, liquid gas	Weight in tonnes	Special Waste	Destination facility type
Total weight of material removed from site:					Tonnes	

*You may not need to give us this information. The requirements are set out in your waste management licence.

Now go to section '5 Declaration' on page 1

EXPLANATORY NOTES - including rights of appeal

RIGHTS OF APPEAL.

Section 43(1) of the Environmental Protection Act 1990 provides that:

Where, except in pursuance of a direction given by the Secretary of State,

- (a) An application for a licence or a modification of the conditions to the licence is rejected
- (b) A licence is granted subject to conditions,

The applicant may appeal from the decision to the Secretary of State

Therefore if you feel aggrieved by the decision or any of the conditions to the licence as granted you may obtain the appropriate form on which to give written notice of an appeal from: -

Environmental Appeals Administration
Planning Inspectorate
Room 4/19
Eagle Wing
Temple Quay House
2 The Square
Temple Quay
BRISTOL
BS1 6PN

Tel: 0117 372 8812

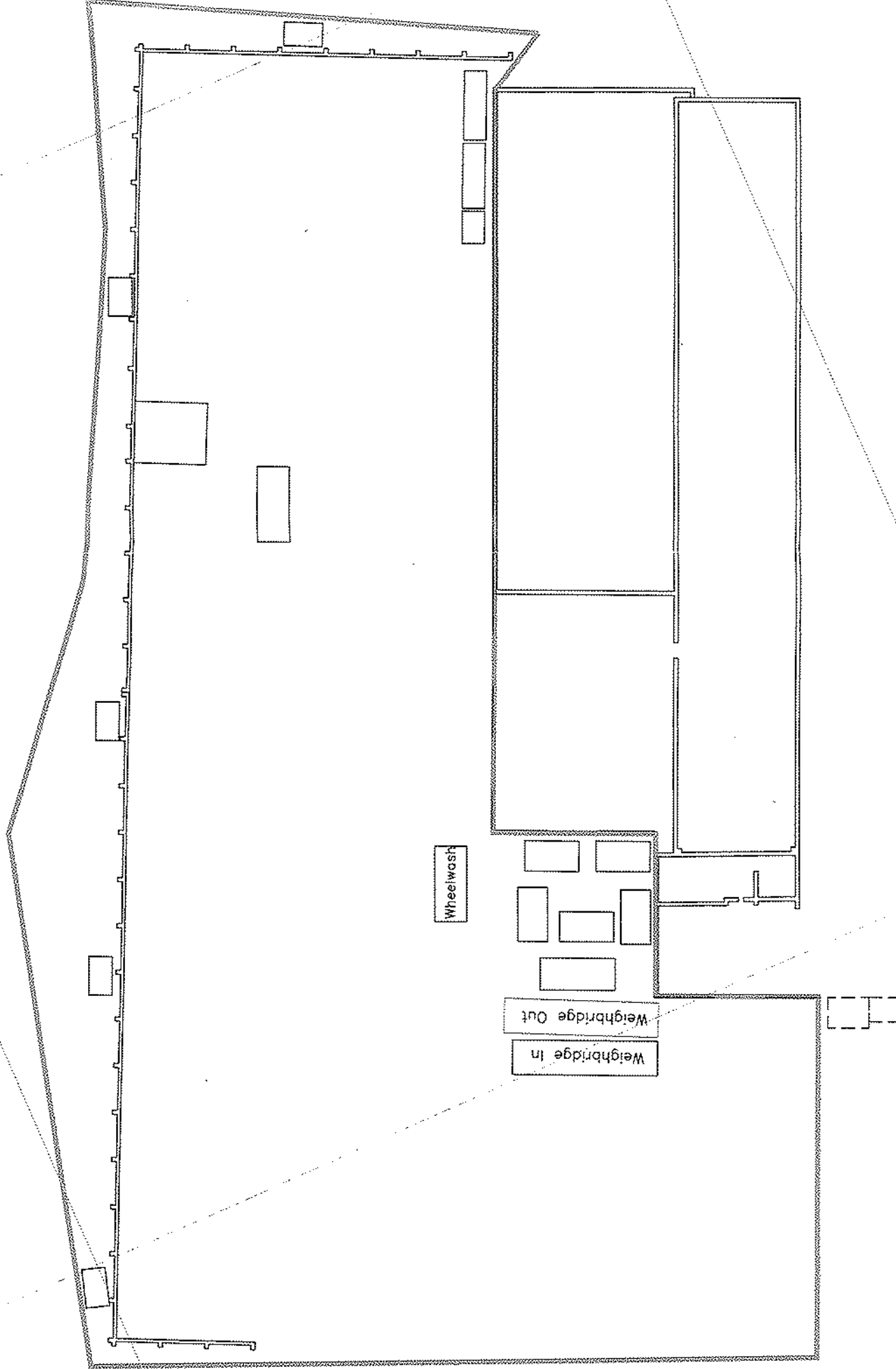
Fax: 0117 372 6093

This notice of appeal should be accompanied by the following information: a copy of the licence; a copy of any correspondence relevant to the appeal; a copy of any other document relevant to the appeal including, in particular, any relevant consent, determination, notice, planning permission, established use certificate or certificate of lawful use or development; and a statement indicating whether you wish the appeal to be in the form of a hearing or on the basis of written representations. You are also required to serve a copy of your notice of appeal, together with copies of any the above documents that have accompanied your notice of appeal, on the Environment Agency at Apollo Court, 2 Bishop Square, St Albans Road West, Hatfield, Herts, AL10 9EX. You should appeal within 6 months of the date that this notice takes effect but the Secretary of State may allow notice of appeal to be given after the expiry of this time period.

KEY

1820

Licence Application Area



1820
5211

5212

A	Licence Application Area boundary moved	SCN	JS	05/12/02

Information - EA	A	JS	06/12/02

WS Atkins Consultants Ltd

100, Victoria Road, London, W12 0JF, UK
Tel: 020 8996 9000 Fax: 020 8996 9001
www.wsatkins.co.uk

THIS DRAWING IS NOT TO BE SCALED

QUATTRO (UK) LIMITED

WASTE RECLAMATION AND RECYCLING CENTRE
REGENCY STREET LONDON - WORKING PLAN

LICENCE APPLICATION AREA

1:500	S.M.		
0	17/04/00		
		A3	06/08/02

AF6394/101

O: /common/gbbma/dwgs/geotechn/f6394/f6394-101a.dwg.dwg



ENVIRONMENTAL PROTECTION ACT 1990

WASTE MANAGEMENT LICENCE

LICENCE REF No: WML80724

FACILITY TYPE: RECYCLING/
RECLAMATION

The Environment Agency, in pursuance of Part II of the Environmental Protection Act 1990, hereby grant a waste management licence authorising the **keeping and treating** of controlled waste on the land specified in schedule 1 to this licence to **QUATTRO (UK) LIMITED (Company registration number 02744918)** of **The Gatehouse, Cunard Road, Park Royal, London NW10 6PN**. Those persons being in occupation of the said land, the said licence being subject to the conditions specified in schedule 2 to this licence.

In this licence the words and expressions contained in schedule 2 shall have the meaning assigned to them therein.

SCHEDULE 1 - SPECIFIED LAND

The licence relates to the land at **the Waste Reclamation and Recycling Centre, British Rail Goods Yard, Kew Bridge North, Lionel Road, Brentford, London TW8 0JA** (hereinafter called the "site") shown edged red on drawing reference number 4096394/017/003, REV A, dated 30th August 2007 and attached to this licence.

Signe



K A Greene
Team Leader – Waste Licensing

Date: *23 November 2007*

For Environment Agency official use only

YOUR ATTENTION IS DRAWN TO THE RIGHTS OF APPEAL DETAILED IN THE
NOTES AT THE END OF THIS LICENCE



creating a better place

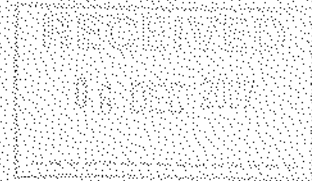
Our ref: WML80724

Date: 4 December 2007



**Environment
Agency**

The Company Secretary
Quattro (UK) Ltd
The Gatehouse
Cunard Road
Park Royal
London
NW10 6PN



Dear Sir

**ENVIRONMENTAL PROTECTION ACT 1990 SECTIONS 35 - 41
WASTE MANAGEMENT LICENSING**

**QUATTRO (UK) LTD, WASTE RECLAMATION & RECYCLING CENTRE, BRITISH RAIL
GOODS YARD, KEW BRIDGE NORTH, LIONEL ROAD, BRENTFORD, LONDON, TW8 0JA**

I refer to your application for a waste management licence for the above facility. I enclose the licence and should be grateful if you would acknowledge receipt by returning the enclosed form.

If you are aggrieved by the decision of the Agency in granting this licence, you may appeal to the Secretary of State in accordance with section 43 of the Environmental Protection Act 1990 and regulations 6 and 7 of the Waste Management Licensing Regulations 1994. Appeals must be notified within 6 months of the date of this Notice using a form available from Environmental Appeals Administration, The Planning Inspectorate, Room 4/19, Eagle Wing, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6PN
Tel: 0117 372 8812, Fax: 0117 372 6093.

The Secretary of State has power to allow a longer period of giving notice of an appeal but he will not normally be prepared to exercise this power unless there are special circumstances which excuse the delay in giving notice of appeal.

I would draw your attention to the fact that in accordance with the provisions of section 64(1) and (4) of the Environmental Protection Act 1990 and regulations 10 and 11 of the Waste Management Licensing Regulations 1994, a copy of your licence will be held by the Agency and made available for inspection by members of the public as part of the public register.

Yours faithfully


KEITH GREENE
Team Leader – Regulatory Waste

Enc.

Environment Agency Apollo Court, 2 Bishop Square, St Albans Road West, Hatfield, Herts, AL10 9EX
Telephone: 08708 506506 Fax: 01707 632610



INVESTOR IN PEOPLE

Schedule 2

1 General considerations

1.1 **Specified waste management operations**

1.1.1 No waste management operations shall be authorised by this licence unless:

- a** specified in and undertaken in accordance with the limitations in section WP/1.1 of the working plan and in the following table; or
- b** otherwise required by the conditions of this licence as being an integral part of those operations:

Table 1.1 Specified waste management operations

Specified Waste Management Operation	Permitted Waste Types which may be subject to the Specified Operation	Limits on Specified Waste Management Operations
D15: Storage pending, on this site any of the category 'D' operations authorised under this column, or elsewhere than on this site, any of the operations listed in Part III of Schedule 4 of the 1994 Regulations, (excluding temporary storage, pending collection, on the site where it is produced).	All	i) Maximum storage capacity 15,000 tonnes ii) Stored on areas of hardstanding or impermeable pavement provided in accordance with condition 2.1
R13: Storage of waste consisting of materials intended for submission, on this site to any of the category 'R' operations authorised under this column, or elsewhere than on this site, to any of the operations listed in Part IV of Schedule 4 of the 1994 Regulations, (excluding temporary storage, pending collection, on the site where it is produced).		
R2: Recycling or reclamation of organic substances which are not used as solvents.		Treatment on areas of hardstanding or impermeable pavement provided in accordance with condition 2.1 and consisting only of:
R3: Recycling or reclamation of metals and metal compounds	All	i) physical sorting or separation of waste into different components, and ii) screening and crushing
R4: Recycling or reclamation of other inorganic materials.		

Specified Waste Management Operations and Exempt Waste Management Operations

- 1.1.2 Where wastes are being brought onto the site for waste management operations which are exempt from licensing under the 1994 Regulations, then the wastes which are subject to the specified waste management operations shall be kept clearly segregated and identified from those wastes which are being kept on the site for the exempt waste management operations.

1.2 **Permitted wastes**

Permitted categories and types of wastes

- 1.2.1 No wastes other than those which are both categorised below in Table 1.2.2 and specified in detail in section WP/1.2 of the working plan and in Appendix A to these conditions shall be accepted at the site.

Permitted quantities of wastes

- 1.2.2 The quantities of wastes accepted shall not exceed those listed in Table 1.2.2 and specified in detail in section WP/1.2 of the working plan and in Appendix A to these conditions. Whilst complying with the maximum quantities specified for each type of waste, the total quantity of waste accepted at the site per year shall not exceed 912,000 tonnes.

Table 1.2.2 Permitted quantities of waste

Permitted Waste Categories	Maximum Permitted Quantities (tonnes/year)
Inert wastes	900,000 tonnes/year
Metal wastes	60,000 tonnes per year
Hazardous Wastes	Not Permitted
Degradable Household Wastes Degradable Commercial Wastes Degradable Industrial Wastes	60,000 tonnes per year

Exclusion of wastes with other specified characteristics

- 1.2.3 Notwithstanding the specification of permitted waste types under conditions 1.2.1 and 1.2.2 above, wastes shall not be accepted at the site which have any of the following characteristics:

Table 1.2.3 Excluded wastes of specified form and type

Waste Characteristic	Type
Form and Type:	Consisting solely or mainly of dusts, powders, liquids, sludges or loose fibres

1.3 **Hours of operation**

- 1.3.1 The following specified waste management operations authorised by this licence shall only be carried out within the times specified in section WP/1.3 of the working plan.

1.4 **Staffing and understanding of requirements of licence conditions and working plan**

Minimum staffing and supervision

1.4.1 Whenever the site is open to receive or despatch waste, or is carrying out any of the specified waste management treatment or disposal operations, it shall be supervised in accordance with section WP/1.5 of the working plan by at least eight members of staff who are suitably trained and fully conversant with the requirements of the licence and the working plan regarding:

- a** waste acceptance and control procedures;
- b** operational controls and environmental monitoring;
- c** maintenance;
- d** record-keeping;
- e** emergency action plans;
- f** notifications to the Agency.

Availability of licence and working plan

1.4.2 A copy of this licence and the working plan shall be kept available on site for reference when required by all site staff carrying out work under the requirements of the licence.

Understanding of licence and working plan

1.4.3 All site staff shall be, or shall work under the direct supervision of a member of staff who is, fully conversant with those aspects of the licence conditions and working plan which are relevant to their specific duties.

1.5 **Changes in technically competent persons**

1.5.1 Any changes in the technically competent management of the site and the name of any incoming person together with evidence that such person has the required technical competence shall be submitted to the Agency in writing within 5 working days of the change in management. Technically competent management and technical competence shall be as defined under section 74 of the Environmental Protection Act 1990 and Regulations 4 and 5 of the 1994 Regulations.

1.6 **Relevant convictions**

Notification of relevant convictions

- 1.6.1 In the event of the Licence Holder and/or any relevant person being convicted of any relevant offence and which is in addition to any already notified to the Agency, then full details shall be provided to the Agency within 14 days following sentencing, whether or not the conviction or sentence is subsequently appealed. Such details shall include, in respect of each relevant person (as defined in section 74(7) of the Environmental Protection Act 1990 or any subsequent amendments to that section), the nature of the offence, the place and date of conviction, and any fine or other penalty imposed.

Notifications of appeals against convictions

- 1.6.2 In the event that the Licence Holder and/or any relevant person lodges an appeal against any such conviction or sentence, the Licence Holder shall notify the Agency of this within 14 days of the lodging. The Licence Holder shall notify the Agency of the results of that appeal, within 14 days of the appeal being decided.

1.7 **Amendments to working plan and supporting information**

Amendments to working plan requiring prior consent from the Agency

- 1.7.1 The Licence Holder shall give the Agency prior notice in writing of any proposed change to those sections of the working plan which are specified in Table 1.7 below, and to any appendices, drawings and figures which are referenced in those sections.

Table 1.7 Sections of working plan requiring prior consent for amendments

Number and Heading of Working Plan Sections and Appendices	Sections, Subsections and Appendices requiring Prior Consent for Amendments
2.0 The Site	WP/1.1, 1.2, Appendix 2
3.0 Site Infrastructure	WP/3.1, 3.2, 4.151, 4.230,
4.0 Site Operations	WP/1.1, 1.3, 1.5, 4.140, 4.153, 4.210
5.0 Site Records	WP/7.1
6.0 Site Engineering	WP/2.210
7.0 Environmental Controls	WP/6.050, 6.010, 6.020, 6.040, 6.030, 6.041

- 1.7.2 The notice shall be accompanied by a copy of the proposed changes, and by a written assessment of the effect that implementing the proposed change to the working plan would have on the risk posed by the site to human health and the environment.
- 1.7.3 The Licence Holder shall provide up to 6 additional copies of the proposed change and supporting risk assessment to the Agency, when required by the Agency in writing.

- 1.7.4 The proposed change to the working plan shall not be implemented unless the Agency has given its written consent to it. Following consent, the Licence Holder shall give the Agency prior written notification of the implementation date of the change, and from that date the changed section shall be deemed to be incorporated in the working plan in replacement of the previous version of that section.

Amendments to the working plan requiring prior notification to the Agency

- 1.7.5 Except where it is specified under condition 1.7.1 above that the amendment of specified sections of the working plan requires the prior consent of the Agency, the Licence Holder shall give the Agency not less than 7 days prior written notice of any change to the working plan and to any appendices, drawings and figures which are referenced from those sections.
- 1.7.6 The notice shall be accompanied by a copy of the specified changes.
- 1.7.7 The Licence Holder shall provide up to 6 additional copies of the proposed change to the Agency, when required by the Agency in writing.
- 1.7.8 Such changes to the working plan shall be deemed to be incorporated in the working plan and implemented on the date specified to the Agency in the amendment notification.

1.8 Notification of change of operator's or holder's details

- 1.8.1 The following information shall be notified in writing within 5 working days to the Agency:
- i) any change in the Licence Holder's trading name, registered name or registered office address;
 - ii) any steps taken with a view to the Licence Holder going into administration, entering into a company voluntary arrangement or being wound up;
 - iii) the operator at the time of issue of the licence and of any change in the operator or in the operator's trading name, address, registered name or registered office address (if different from the Licence Holder);

1.9 Notification of preparatory works

- 1.9.1 No preparatory works shall be undertaken until at least 7 days prior notice in writing has been given to the Agency of the intention to do so. The notification shall include details of what work is being done and when.

1.10 **Notification of cessation and recommencement of waste handling operations**

Cessation and recommencement of receiving wastes

- 1.10.1 In the event that the site ceases receiving wastes for longer than 21 days then within 7 days following the elapse of that time, the Licence Holder shall inform the Agency in writing of the date of cessation and of the planned date of recommencement. In the event that the site recommences receiving wastes sooner than the notified date then the Licence Holder shall give the Agency not less than 7 days prior notice in writing.

1.11 **Notifications and submissions to Agency**

- 1.11.1 Except where otherwise specified, all notifications and submissions to the Agency under the requirements of these licence conditions:
- a** shall be made in writing to the address specified by the Agency in writing at the time of issue of this licence, or as subsequently specified by written notification to the Licence Holder;
 - b** shall quote the licence reference number and the name of the Licence Holder.

2 Site engineering for pollution prevention and control

2.1 **Engineered site containment and drainage systems**

Provision and maintenance of site containment and drainage systems

- 2.1.1 No waste shall be deposited, stored, treated or otherwise handled in any area of the site, from a date three months from the date of issue of this licence, unless the engineered site containment and drainage system for that area has been constructed and completed in accordance with this condition and section WP/2.210 of the working plan and condition 2.1.2.
- 2.1.2 The engineered site containment and drainage systems shall be designed, constructed, inspected, maintained and meet the standards specified in Table 2.1 below.

Table 2.1 Site containment and drainage standards

Type of Site Surface and Drainage	Minimum Specified Standards of Design, Construction and Maintenance
a) Hardstanding	Areas of hardstanding shall be constructed of granular material (e.g. crushed stone, aggregate, road planings or other similar material) and maintained such that the working surface: i) shall remain even ii) shall not be subject to settlement or differential settlement iii) shall not be subject to rutting by vehicles even when wet iv) shall have sufficient durability to allow cleaning for example by scraping v) shall remain free of standing water.
b) Impermeable pavement, bunding and sills	Areas of impermeable pavement, bunding and sills shall be constructed and maintained so as to prevent fluids running off the pavement and the transmission of fluids through the pavement or joints.
c) Sealed drainage systems	Drainage to areas of impermeable pavement shall be provided by a sealed drainage system, that is comprised of a drainage system with impermeable components which does not leak and which will ensure that:- • no liquid will run off the pavement other than via the system; and • except where they may be lawfully discharged, all liquids entering the system are collected in a sealed sump. i) Sealed sumps shall be inspected no less frequently than daily and after rain, emptied when the collected liquids reach 80% of the capacity of the sump as measured using a dipstick or equivalent gauge, and constructed and maintained so as to collect and contain all liquids which run off the pavement; ii) Inspections and emptying of sealed sumps shall be recorded in the site diary. iii) Uncontaminated drainage from clean yard areas shall be kept separate and discharged to either surface water or sewer or watercourse or soakaway
d) Covered buildings or roofed areas	Where wastes are stored in a building: i) the building shall be designed, constructed and maintained to prevent ingress of rain and surface water. ii) roof water shall be kept separate from contaminated water and other liquids and shall be discharged to either surface water or a sewer or a water course or a soakaway.
e) Fixed bays and other fixed containers	All fixed bays and other fixed containers used for the storage and treatment of wastes must be constructed and maintained to a standard that is fit for purpose.
f) Inspection and maintenance of engineered containment	All areas of hardstanding, impermeable pavement, sealed drainage systems, covered buildings, roofed areas, fixed bays and other containers, and storage areas for skips, drums and other mobile tanks and containers: i) shall be inspected no less frequently than monthly, to ensure the continuing integrity and fitness for purpose of their construction, and the inspection and any necessary maintenance shall be recorded in the site diary; and ii) in the event of any damage occurring which breaches the integrity of the engineered containment so that it no longer meets the specified standards, the Licence Holder shall cease importing waste into or treating waste in the affected area, shall notify the Agency immediately, and shall not recommence importing waste into or treating waste in the affected area until it has been repaired to a standard at least as good as the original specification.

3 Site infrastructure

3.1 **Provision of site identification board**

3.1.1 No wastes shall be received at the site until an identification board has been provided at or near the site entrance.

3.1.2 The identification board shall be inspected at least once per week. In the event of damage or defect, the board shall be repaired or replaced within 3 working days.

3.1.3 The board shall be easily readable from outside the site entrance, and shall display the following information:

- a** Site name and address;
- b** Licence Holder name (company name, not individual name unless justified as necessary);
- c** Operator name (company name, not individual name unless justified as necessary);
- d** Licence number;
- e** Emergency contact name and telephone number (for security reasons, personal names and home phone numbers should not be used except where no alternative is practicable);
- f** Statement that the site is licensed by the Environment Agency;
- g** Agency national number: 08708506506
- h** Days and hours site is open to receive waste.

The location of the noticeboard should be such that it is clear that it does not designate areas outside the licensed site and does not encourage illegal tipping.

3.2 **Site security**

3.2.1 Site security systems shall be provided at all times during the subsistence of this licence, the objective of which shall be to prevent access by humans which is not authorised either by the Licence Holder or under legal powers of entry. These shall be installed, operated and maintained, and shall be fully documented and recorded, in accordance with sections WP/3.2 and addendum to the working plan, dated 22/11/07.

3.2.2 A system of sighting marks shall be devised in accordance with the addendum to the working plan and submitted to the Environment Agency for approval within two weeks of the date of issue of this licence, and upon written agreement from the Agency, the agreed system shall be installed within one month of the date of issue of the licence, and maintained thereafter.

3.2.3 The site shall cease accepting waste one month from the date of issue of the licence if the requirements of 3.2.2 are not met.

4 Site operations

4.1 Control of mud and debris

Prevention of mud and debris on road

- 4.1.1 Whenever the site is receiving or despatching wastes measures shall be provided, operated and maintained in accordance with section WP/4.140 of the working plan, with the objective of preventing the deposit or tracking of mud or debris arising from the site onto public areas outside the site, which shall include public highways and areas of public access outside the site.

- 4.1.2 All vehicles leaving areas of the site which are operational or upon which engineering works are being carried out shall, before leaving the site, be cleaned as necessary using the specified equipment and shall be checked to ensure that they are clear of loose waste and that their loads are secure.

Remediation of mud and debris on road

- 4.1.3 In the event that mud or debris arising from the site is deposited onto public areas outside the site, remedial measures shall be implemented immediately, in accordance with section WP/4.140 of the working plan.

4.2 Potentially polluting leaks and spillages of waste

Potentially polluting leaks and spillages from vehicles, plant and equipment

- 4.2.1 All vehicles used on the site by the operator, and all plant and all equipment used on the site in connection with specified waste management operations, shall be operated and maintained with the objective of preventing potentially polluting leaks and spillages of wastes.

Control and remediation of leaks and spillages

- 4.2.2 In the event of any potentially polluting leak or spillage occurring on site, documented control and remediation procedures shall be implemented immediately and recorded, in accordance with section WP/4.2 of the working plan and the standards specified in Table 4.151 below.

Leak and spillage action plan

- 4.2.3 In the event of any leak or spillage which may compromise the effectiveness of the pollution control regime and which either is leading or may imminently lead to pollution of the environment, harm to human health or serious detriment of the amenities of the locality, a Leak and Spillage Action Plan shall be implemented immediately and recorded, in accordance with section WP/4.151 of the working plan and the standards specified in Table 4.2 below.

Table 4.2 Standards for prevention and control of leaks and spillages

Action	Specified standards
a) Control and remediation of leaks and spillages	i) Minor spillages shall be cleaned up immediately, using sand or proprietary absorbent to clean up liquids and placed in alternative containers. ii) Major spillages, which are causing or are likely to cause polluting emissions to the environment: • immediate action shall taken to contain the spillage and prevent liquid from entering surface water drains, water courses and unsurfaced ground; • the spillage shall be cleared immediately and placed in alternative containers; • the Agency shall be informed immediately.

4.3 **Fires on the site**

Prohibition of unauthorised fires on site

4.3.1 No wastes shall be burned on the site.

Fire action plan

4.3.2 In the event of a fire on the site, a fire action plan shall be implemented immediately and recorded, in accordance with section WP/4.153 of the working plan.

4.4 **Waste acceptance and control procedures**

Waste acceptance procedures

4.4.1 All wastes shall be received, inspected, accepted or rejected, and recorded in accordance with section WP/4.210 of the working plan and the standards specified in Table 4.4 below.

Waste control procedures

4.4.2 All wastes accepted at the site shall be handled, kept and recorded in accordance with section WP/4.210 of the working plan and the standards specified in Table 4.4 below.

Waste despatch procedures

4.4.3 All outgoing wastes shall be inspected, despatched and recorded in accordance with section WP/4.210 of the working plan and the standards specified in Table 4.4 below.

Incompatible wastes

- 4.4.4 Incompatible wastes which are likely, in combination with each other or with other material at the facility, to give rise to pollution of the environment or harm to human health outside the site, shall be clearly identified and kept physically separate in designated areas, in accordance with section WP/4.210 of the working plan and the standards specified in Table 4.4 below.

Table 4.4 Standards for waste acceptance and control procedures

Stage of Waste Handling	Specified standards
a) Waste inspection	All wastes received at the site: i) shall be inspected on receipt to confirm their description and composition against the relevant waste transfer note and other accompanying documentation. ii) shall be kept separate from and shall not be mixed with other wastes until they have been confirmed and recorded for acceptance at the site.
b) Waste control procedures: quarantine storage and rejection of wastes	i) Any items of non-permitted waste which are detected after acceptance at the site, shall be placed immediately in a designated quarantine container, and, where these are or appear to be special wastes, the Agency shall be informed immediately; ii) In the quarantine area, wastes shall be kept segregated from other wastes which are or are likely to be incompatible; iii) Quarantined wastes shall be removed from site within 7 days; iv) The maximum quantity of wastes kept in the quarantine storage area shall be 4.6m³ at any one time. v) A record shall be kept in the site diary of all rejected wastes and all wastes kept in quarantine storage.
c) Waste despatch procedures	i) All wastes despatched from the site shall be inspected prior to despatch to confirm their description and composition.

4.5 Waste quantity measurement systems

Means of measurement

- 4.5.1 All wastes accepted at and despatched from the site shall be measured in accordance with section WP/4.230 of the working plan.

4.6 Storage of wastes with specified hazardous properties or forms

- 4.6.1 Notwithstanding the specification of permitted waste types under condition 1.2, wastes displaying any of the hazardous properties or forms specified in Table 4.6 shall only be handled and/or stored on the site in accordance with the standards specified in Table 4.6 below.

Table 4.6 Standards for storage of wastes with specified hazardous characteristics

Storage requirement	Specified standards
a) Solid wastes which when handled, stored or treated are likely to generate significant quantities of dusts, fibres or particulates	These wastes only permitted if they are handled, stored and treated either in: i) buildings or containers providing containment of aerial emissions of dusts and particulates; or ii) bays or roofed areas provided with a permanent water supply and water spraying or misting equipment, and with an impermeable pavement and a sealed drainage system; and the water spraying or misting equipment is used at all times when significant quantities of dusts, fibres or particulates are likely to be, or are being generated.
b) Solid wastes which are likely to produce polluting or contaminating run-off.	These wastes only permitted if stored in areas with either: i) hardstanding and drainage that prevents run-off from the waste into adjacent surface water bodies or storm water drains; or ii) an impermeable pavement and sealed drainage system

4.7 Removal of residual wastes from site

- 4.7.1 In the event that no wastes are received on the site for 6 months and the Agency has reasonable grounds to believe that the importation of wastes will not be resumed, then, notwithstanding any operational limits on storage times of wastes specified in the other conditions of this licence, the licence holder shall ensure that all wastes remaining on the site shall be removed by the date specified by the Agency in writing. This shall include, where required by the Agency, cleaning of plant, equipment and engineered containment used in the specified waste management operations, and emptying of any sealed sumps or interceptors.

Amenity management and reporting

5.1 **Control, monitoring and reporting of dusts, fibres and particulates**

- 5.1.1 Measures shall be implemented and maintained throughout the operational life of the site to control and monitor emissions of dusts, fibres and particulates from the site, in accordance with this condition and section WP/6.010 of the working plan.
- 5.1.2 All emissions to air from the specified waste management operations on the site shall be free from visible concentrations of dusts, fibres or particulates as are likely to cause pollution of the environment or harm to human health or serious detriment to the amenity of the locality outside the site boundary, as perceived by an authorised officer of the Agency.
- 5.1.3 In the event that any dusts, fibres or particulates arising from the site are released or are likely to be released outside the site boundary in such quantities or concentrations that they are likely to cause pollution of the environment or harm to human health or serious detriment to the amenity of the locality, the actions specified in section WP/6.010 of the working plan shall be implemented immediately.

5.2 **Control of odours**

- 5.2.1 Measures shall be implemented and maintained throughout the operational life of the site to control and monitor emissions of odours from the site, in accordance with this condition and section WP/6.020 of the working plan.
- 5.2.2 All emissions to air from the specified waste management operations on the site shall be free from odours at levels as are likely to cause pollution of the environment or harm to human health or serious detriment to the amenity of the locality outside the site boundary, as perceived by an authorised officer of the Agency.
- 5.2.3 In the event that any odours arising from the site are released or are likely to be released outside the site boundary at such levels that they are likely to cause pollution of the environment or harm to human health or serious detriment to the amenity of the locality, the actions specified in section WP/6.020 of the working plan shall be implemented immediately.

5.3 **Control of noise**

- 5.3.2 Measures shall be implemented and maintained throughout the operational life of the site, in accordance with this condition and section WP/6.030 of the working plan, to control and minimise the levels of noise from operations on the site beyond the site boundary.

5.4 **Control of pest infestations**

- 5.4.1 Measures shall be implemented and maintained throughout the operational life of the site to control and monitor the presence of pests on the site, in accordance with section WP/6.040 of the working plan.

5.5 **Control of scavenging birds and other scavengers**

- 5.5.1 Measures shall be implemented and maintained throughout the operational life of the site to control and monitor the presence of scavenging birds and other scavengers on the site, in accordance with section WP/6.041 of the working plan.

5.6 **Control of litter**

- 5.6.1 Measures shall be implemented and maintained throughout the operational life of the site to control and monitor the escape of litter from the confines of the site, in accordance with section WP/6.050 of the working plan.
- 5.6.2 In the event that litter does escape from the site, it shall be retrieved by the end of the working day.

6 Site records

6.1 Security and availability of records

Security of records

- 6.1.1 All records which are required to be made under the other conditions of this licence and the working plan shall be maintained and kept secure from loss, damage or deterioration, and shall be kept in accordance with section WP/7.1 of the working plan and the requirements specified in Table 6.1 below.

Availability of records

- 6.1.2 All records which are required to be made under the other conditions of this licence and the working plan shall be made available for inspection at the place where they are kept immediately when required by an authorised officer of the Agency.

Table 6.1 Standards for keeping of site records

Site records	Specified standards
Wastes accepted at the site; Wastes rejected. Wastes despatched from the site; Site diaries.	1. All records shall be stored either: a) on paper in a secure cabinet or cupboard; or b) on computer disc with a back up copy. 2. Records shall be kept for a minimum of two years.

6.2 Records of waste movements

Recording of wastes accepted and removed

- 6.2.1 A record shall be kept of each load of waste accepted and each load of waste removed from site. This record shall include the following details:
- a** Loads in:- Waste type as specified under condition 1.2 and in WP/1.2, quantity (tonnes), date received, date accepted.
 - b** Loads out:- Waste type as specified under condition 1.2 and in WP/1.2, quantity of waste removed (tonnes), date removed.

Summary records of wastes accepted and removed

- 6.2.2 A summary record of the waste types and quantities accepted and removed from the site shall be made for each quarter of the financial year and shall be submitted to the Agency within 1 month following the end of that quarter. The summary record shall be in the format detailed in Appendix B or otherwise subsequently agreed with the Agency in writing.

6.3 **Site diary**

6.3.1 A site diary shall be kept secure and shall be available for inspection at the site when required by an authorised officer of the Agency. This shall include a record of the following events, in accordance with the other conditions of this licence:

- a** construction work
- b** start and finish of daily waste management activities on site
- c** maintenance
- d** breakdowns
- e** emergencies
- f** problems with waste received and action taken
- g** site inspections and consequent actions carried out by the operator
- h** technically competent management attendance on site: the date and the time onto site and the time left site
- i** despatch of records to the Agency
- j** severe weather conditions
- k** complaints about site operations and actions taken
- l** environmental problems and remedial actions

6.3.2 Each record shall be completed within 24 hours of the relevant event.

Interpretation

In these conditions and their interpretation, unless the context otherwise requires, the following terms have the specified meanings:

"accepted"

for waste being delivered to the site, shall mean accepted as waste input to the site for storage and/or processing and/or disposal under the specified waste management operations;

"authorised officer of the Agency"

means any person(s) authorised in writing by the Agency pursuant to section 108(1) of the 1995 Act to exercise any of the powers specified in subsection (4) of that section;

"container"

means a container which does not permit either the ingress or egress of liquids, or the escape of dusts or wastes contained within it;

"engineered"

for works specified in these conditions, means carried out and completed using the relevant engineering process specified in these conditions;

"engineering"

for engineering works specified in these conditions, means the relevant process of design, construction or installation, quality assurance or validation or commissioning specified in these conditions;

"groundwater"

means any water contained in underground strata;

"hazardous"

means a property that in particular circumstances could lead to harm;

"hazardous waste"

has the meaning as defined by regulation 6 of the The Hazardous Waste (England and Wales) Regulations 2005 or any statutory provisions or regulations amending or replacing them;

"immediately"

for carrying out of actions under the conditions, shall mean without delay and within a reasonable time, taking into account any more immediate direct action necessary to prevent or minimise risk to human health and the environment. For carrying out notifications to the Agency, shall also mean by the fastest effective means available (for example, telephone) and confirmed in writing within 1 working day (or such other time as may be agreed by the Agency within the conditions);

"inert waste"

means wastes which will not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm to human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant and in particular not endanger the quality of surface water and/or groundwater.

"maintenance"

for engineering maintenance specified in these conditions, means the process of inspection, testing, repair of the relevant engineering works specified in these conditions;

"received"

for waste being delivered to the site, shall mean delivered to the site and undergoing the waste acceptance procedures, including storage of those wastes during those procedures prior to acceptance of the waste;

"relevant offences"

are offences within the meaning of regulation 3 of the Waste Management Licensing Regulations 1994 or any statutory provisions or regulations amending or replacing them;

"specified waste management operations"

means the waste management operations authorised by condition 1.1 of this licence;

"surface water"

means any lake, pond, river or watercourse whether natural or artificial;

"the 1994 Regulations"

means the Waste Management Licensing Regulations 1994 and any statutory provisions or regulations amending or replacing them.

"the Agency"

means the Environment Agency;

"the Licence Holder"

means the Licence Holder specified in this licence or other person to whom the licence has been transferred in accordance with section 40 of the Environmental Protection Act 1990;

"the operator"

means a person who is in occupation of the site and has responsibility for carrying out day to day activities at the site;

"the site"

means the land, structures, plant and equipment to which this licence relates;

"time periods, e.g. annually, quarterly, monthly, per year, etc. "

Where periods are referred to in conditions, they shall be calculated in the following way:

- annually or per year: 1 April to 31 March;

- quarterly: 1 April to 30 June, 1 July to 30 September, 1 October to 31 December, 1 January to 31 March;
- monthly: calendar month;
- weekly: Monday to Sunday.

Where the issue of the licence does not coincide with the start of any of these periods, then any relevant limits for the first period shall apply pro rata;

"waste"

means controlled waste as defined in section 75(4) of the 1990 Act and the Controlled Waste Regulations 1992 or any statutory provisions or regulations amending or replacing them;

Appendix A Permitted Wastes

EWC	Description
17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)
17 01	concrete, bricks, tiles and ceramics
17 01 01	concrete
17 01 02	bricks
17 01 03	tiles and ceramics
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02	wood, glass and plastic
17 02 01	wood
17 02 02	glass
17 02 03	plastic
17 03	bituminous mixtures, coal tar and tarred products
17 03 02	bituminous mixtures other than those mentioned in 17 03 01
17 04	metals (including their alloys)
17 04 01	copper, bronze, brass
17 04 02	aluminium
17 04 04	zinc
17 04 05	iron and steel
17 04 06	tin
17 04 07	mixed metals
17 04 11	cable other than those mentioned in 17 04 10
17 05	soil, stones and dredging spoil
17 05 04	soil and stones other than those mentioned in 17 05 03
17 05 06	dredging spoil other than those mentioned in 17 05 06
17 05 08	track ballast other than those mentioned in 17 05 07
17 08	gypsum-based construction materials
17 08 02	gypsum-based construction materials other than those mentioned in 17 08 01
17 09	other construction and demolition waste
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
20	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, GARDEN AND PARK WASTES (INCLUDING CEMETERY WASTE))
20 02	biodegradable waste
20 02 01	soil and stones
20 02 02	other non-biodegradable wastes
20 03	other municipal wastes
20 03 03	street-cleaning residues

For Environment
Agency use only

Date received

Date processed

Local site licence number

WML No

Original reference

80724

ENVIRONMENT
AGENCY

Waste Return

Environmental Protection Act 1990

Waste Returns Unit
Environment Agency
Apollo Court
2 Bishop Square
St Albans Road West
Hatfield
Herts. AL10 9EX

1 The period the return covers

1.1 The return period is tick one only

☐ Month☐ QuarterFrom to ☐ Year

2 Operator and site details

2.1 Site Operator

QUATTRO (UK) LIMITED

Site name

WASTE RECLAMATION AND RECYCLING CENTRE

WML Number: 80724

Site address

BRITISH RAIL GOODS YARD
KEW BRIDGE NORTH
LIONEL ROAD, BRENTFORD
LONDON
TW8 0JA

Phone

E-mail

2.2 Type of facility see your waste management licence

MATERIALS RECLAMATION FACILITY

2.3 Was a weighbridge used?

No ☐Yes ☐

Please tell us the proportion weighed

Percentage

2.4 Are you operating a landfill site?

No ☒ go to section '3' Waste received on site' on page 2Yes ☐ go to section 'Landfill sites only', question 2.5

Landfill Sites only (as at 31 March in the current year)

2.5 Give the remaining void space covered by the licence

cubic metres

- Use this form to tell us the type and quantity of controlled waste you have processed at each licensed facility within your site
- Please read through the whole form and guidance notes before you start filling anything in.
- Please send the completed form back to us at the address on the left by the return date specified on page 2 of the notes.

Landfill sites only continued

2.6 Was the site fully surveyed before 31 March in the current year

No ☐ Now go to question 2.7Yes ☐ Please tell us how the void space was calculated

Now go to question 2.8

2.7 How have you estimated the remaining void space?

For example visually or other method

2.8 Remaining life of site

Years

Now go to sections 3 and 4 on page 2

5 Declaration

Please make sure you have filled in all the sections that apply to you before signing this declaration.

I certify that the information in this return is correct to the best of my knowledge and belief.

I enclose ☐ continuation sheets

Signature

Name

Position

Phone

Date

6 Disclosure and data protection

The information you provide will be used by the Environment Agency to enable it to fulfil its regulatory and waste management planning responsibilities.

For full information on how the data in this form will be used please see the waste return guidance notes that come with the form.

3 Waste material received on site

Please read the guidance notes 'How to fill in the form', and use the continuation sheet **WMS3** provided, or a copy of it, if you need to.

In the last column D = final disposal U = used on site S = special waste (a consignment note is needed for special waste).
F = from another facility, for example a transfer station M = municipal biodegradable waste O = other biodegradable waste

Description of waste	Waste classification code	Origin*	State solid, powder, sludge, liquid ,gas	Weight in tonnes	Additional information					
					D	U	S	F	M	O
Total weight of material received on site:					tonnes					

4 Waste material removed from site

Please read the guidance notes 'How to fill in the form', and use the continuation sheet **WMS3** provided, or a copy of it, if you need to. In the last column, facility types could include 'incinerator, transfer station, landfill, treatment, reprocessing, recycling'.

Description of waste	Waste classification code	Destination*	State solid, powder, sludge, liquid ,gas	Weight in tonnes	Special Waste	Destination facility type
Total weight of material removed from site:					Tonnes	

*You may not need to give us this information. The requirements are set out in your waste management licence.

Now go to section 5 'Declaration' on page 1

EXPLANATORY NOTES - Including rights of appeal.

RIGHTS OF APPEAL

Section 43(1) of the Environmental Protection Act 1990 provides that —

Where, except in pursuance of a direction given by the Secretary of State,

- (a) an application for a licence or a modification of the conditions of a licence is rejected
- (b) a licence is granted subject to conditions,

The applicant may appeal from the decision to the Secretary of State.

Therefore, if you feel aggrieved by the decision detailed on the attached notice, you may obtain the appropriate form on which to give written notice of an appeal from :-

The Planning Inspectorate

Room 215

Regus Building

1 Friary

Temple Quay

Bristol

BS1 6EA

Tel: 0117 344 5680, 5682 or 5683

Fax: 0117 344 5242

For Wales, the address is

The Planning Inspectorate

Crown Buildings

Cathays Park

Cardiff

CF10 3NQ

Tel: 02920 823859

This notice of appeal should be accompanied by the following information:

A statement of the grounds of appeal;

A copy of any application to modify the licence

A copy of the licence;

A copy of any correspondence relevant to the appeal;

A copy of any other document relevant to the appeal including, in particular, any relevant consent, determination, notice, planning permission, established use certificate or certificate of lawful use or development and

A statement indicating whether you wish the appeal to be in the form of a hearing or on the basis of written representations.

You are also required to serve a copy of your notice of appeal, together with copies of any the above documents that have accompanied your notice of appeal, on the Environment Agency (at the address on the first page of this Notice). You should appeal within 6 months of the date that this notice takes effect but the Secretary of State may allow notice of appeal to be given after the expiry of this time period.

BASED UPON THE ORDINANCE SURVEY'S MAPPING
WITH THE PERMISSION OF THE CONTROLLER
OF H.M. STATIONERY OFFICE.

REVISIONS			Drawn By	Checked By	Date
A	LICENSE APPLICATION: BOUNDARY REVISED FOR CLEV BOUNDARY	JH	JAS		30/08/07

PURPOSE OF ISSUE	Rev.	Authorised For Issue	Date
EA LICENCE DETERMINATION EA LICENCE APPLICATION	1 2	JAS JAS	30/08/07 14/07/05

Atkins Consultants Ltd

Consulting Engineers

The Ads. 10 Holiday Street
Winn's address: West 188-4-40-41 11F

James Thompson West 1850-1917

THIS DRAWING

011447500 0110 1 000

QUATTRO (UK) LTD

PROJECT _____

SOLID WASTE RECLAMATION

CENTRE, KEW BRIDG

DRAWING TITLE

LICENCE APPLICATION

SCALE

100

COPIES	DATE
15005-1	11/11/2005

DATE	000001
JM	

14/07/08

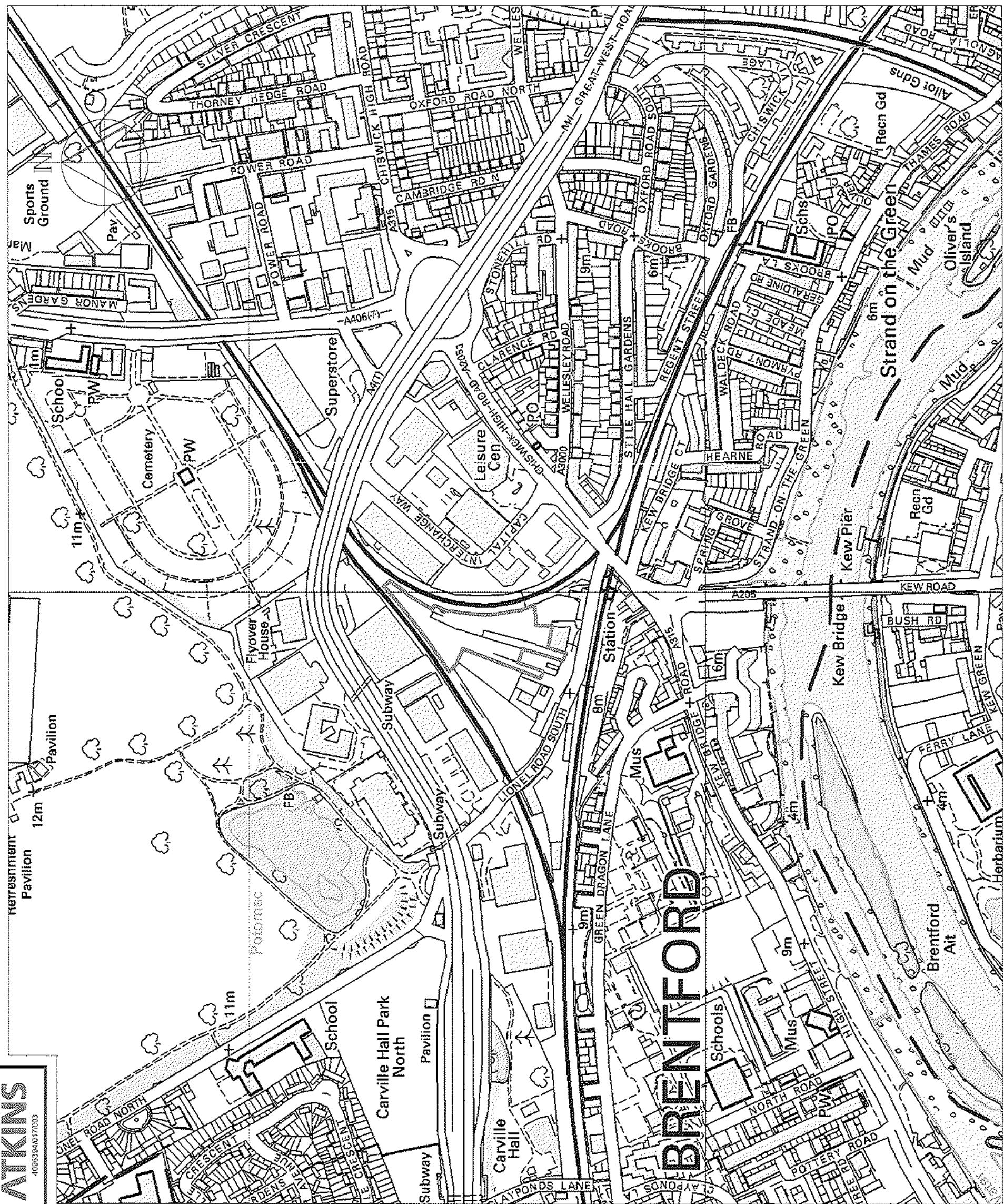
376

ON ORIGIN

4795

21014774-095394 Quarto (JAS) (JAS)

.....



APPENDIX 2

SITE PLANS

Setting out dimensions,
walls and levels to
architects' drawings

- GENERAL NOTES:
- This drawing is copyright (C).
 - This drawing is to be read in conjunction with all relevant drawings and specifications.
 - This drawing shall not be scaled, use only figured dimensions. All dimensions are shown in millimetres and levels in metres above OS Datum.
 - Dimensions and conditions shall be verified on site. Any discrepancies between this drawing and site conditions shall be brought to the attention of the Engineer for resolution prior to placing orders or construction.
 - All work shall comply with the Building Regulations and the requirements of the Local Authority, current Codes of practice and British Standards.
 - Dimensions indicated thus:- 'are to be confirmed on site.
 - For remainder of notes see drg no. H11930-11.
 - Our design is based upon the assumptions: Existing blockwork is assumed to be 100mm 3.5N in 1:6 mortar. Existing brickwork to be 20.5N in 1:6 mortar. Existing timbers to be grade C16. Limits assumed to exist over all existing openings. Wall ties assumed to be in good condition. Assumed minimum party wall thickness to be 225mm solid masonry wall construction.
 - Waterproofing details shown are indicative only. Architect to confirm final details.
 - Splice requirements to new steel beams to be allowed for by contractor as required. Splice design assumed responsibility of fabricator, unless specifically requested of S.E.P.
 - All structural steelwork shall be to BS EN 10025 & BS EN 10210, Grade S355 unless noted otherwise. All beams to be CE marked.
 - High risk of saturation and freezing (masonry most vulnerable is situated 150mm above and 150mm below finished ground level) durability classification to be a MX3.2, F2, S2 or S1*

LEGEND

- Recycling plant (Refer to separate drg)
- Building for Incoming waste
- Concrete batching plant (Refer to separate drg)
- Material stockbays – covered and automatic sprinkler system installed (10m cc) to edge of canopy to assist with dust mitigation control
 - Aggregate material stockbays
 - Recycled material stockbays
- 8m easement for future foul sewer LBH (no build zone)
- 'IN' and 'OUT' weighbridges
- Welfare/Office
- Car parking (25+1spaces)
- Covered cycle store (20 cycles) with provision for 1 No adapted cycle
- Service parking
- Area of operation for mobile dust suppression spray unit (hatched area)
- *blue line – Sleeper and steel wall (refer to separate drg). 500mm high concrete stub with sleeper and steel 3.0m high built from concrete wall. Wind supports required at relevant intervals. Automated sprinkler system installed (10m c/c) to top of wall to assist with dust mitigation.
- Wheelwash + water tank
- 'Sorted' waste out area
- Building for outgoing waste
- Electrical Substation/Switchroom 01032/E/P46
- Electrical Switchroom
- Barrier controlled in/out concrete transport
- Security Office
- Weighbridge Office (raised structure)
- Pedestrian walking route
- *magenta line – Concrete wall, 5m high. Automated sprinkler system installed (10m c/c) to top of wall to assist with dust mitigation.
- Short canopy cover over concrete wall



PROPOSED

R	Updated to clients requirements	PR	29.04.20	GN	GN
Q	Updated to clients requirements	PR	25.03.20	GN	GN
P	Update to comments	PR	16.03.20	GN	GN
N	Minor adjustment	PR	04.03.20	GN	GN
M	Minor adjustment	PR	06.02.20	GN	GN
L	Updated to comments	PR	31.01.20	GN	GN
K	Updated to comments	PR	27.01.20	GN	GN
J	Adjustments to improvements shown	PR	14.01.20	GN	GN
H	Proposed improvements shown in layout	PR	03.12.19	GN	GN
G	As built issue	PR	02.10.19	GN	GN
F	Change layout to client's request	PR	07.06.17	GN	GN
E	Change layout to client's request	PR	19.05.17	GN	GN
D	Reduced site width	PR	28.04.17	GN	GN
C	Minor layout adjustments	PR	27.03.17	GN	GN
B	Minor layout adjustments	PR	27.03.17	GN	GN
A	Minor layout adjustments	PR	24.03.17	GN	GN
Rev	Description	By	Date	Chk'd	Auth

MARKS
HUELEY

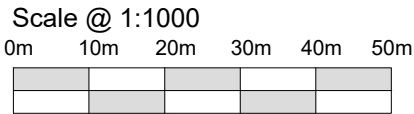
THE STABLES
CANNONS MILL LANE
BISHOPS STORTFORD
HERTFORDSHIRE CM23 2BN
TELEPHONE: 01279 465900
FACSIMILE: 01279 465999
GENERAL@MARKSHUELEY.CO.UK

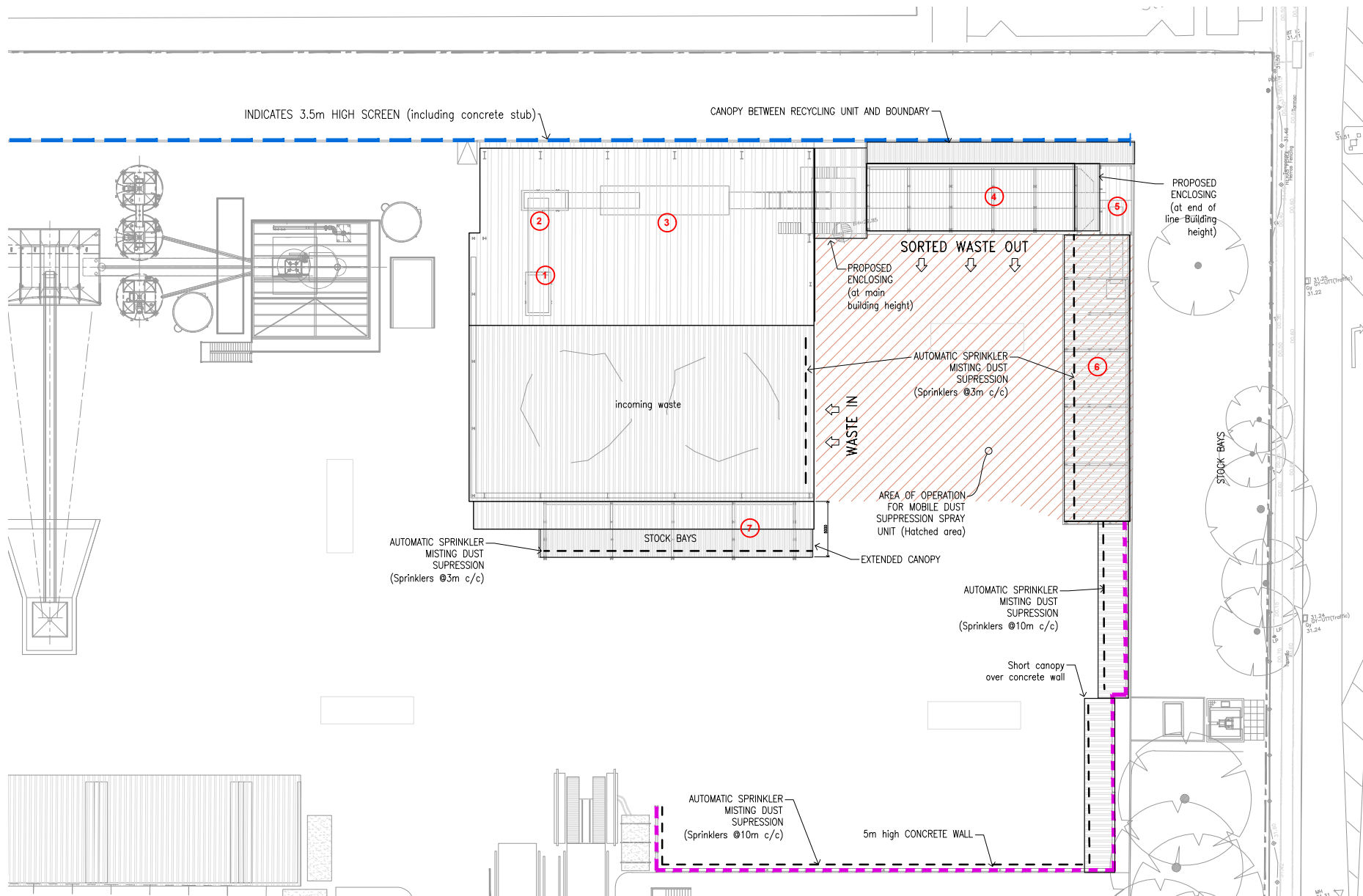
CONSULTING STRUCTURAL AND CIVIL ENGINEERS

Client	QUATTRO				
Project	SOUTHALL LANE, HAYES UB2 5XJ				
Title	PROPOSED SITE LAYOUT				
Sheet Size	Original Scale	Designed/Drawn	Checked	Authorised	
A3	As Shown	PR	GN	GN	
Status	Drawing Number	Date	Date	Date	Rev
P	H11930-11	23.03.17	23.03.17	23.03.17	R



PROPOSED SITE LAYOUT
1:1000





LEGEND

- 1 CONVEYOR
- 2 TROMMEL SCREEN
- 3 CONVEYOR
- 4 PICKING STATION (5 units)
- 5 FINAL PRODUCT – END OF LINE
- 6 RECYCLED MATERIAL STOCK BAYS
- 7 AGGREGATE STOCK BAYS

PROPOSED

M	Update to comments	PR	01.05.20	GN	GN
L	Updated layout to client's requirements	PR	29.04.20	GN	GN
K	Update to comments	PR	16.03.20	GN	GN
J	Submission issue	PR	05.03.20	GN	GN
H	Updated to comments	PR	31.01.20	GN	GN
G	Updated to comments	PR	27.01.20	GN	GN
F	Adjustments to improvements shown	PR	14.01.20	GN	GN
E	Proposed improvements shown	PR	03.12.19	GN	GN
D	As built issue	PR	02.10.19	GN	GN
C	Note added	PR	27.03.17	GN	GN
B	Minor adjustments	PR	27.03.17	GN	GN
A	Minor adjustments	PR	24.03.17	GN	GN
Rev	Description	By	Date	Chk'd	Auth

MARKS
HUELEY

THE STABLES
CANNONS MILL LANE
BISHOPS STORTFORD
HERTFORDSHIRE CM23 2BN
TELEPHONE: 01279 465900
FACSIMILE: 01279 465999
GENERAL@MARKSHUELEY.CO.UK

©

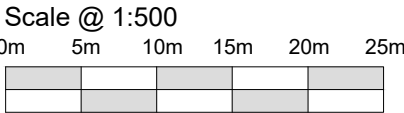
CONSULTING STRUCTURAL AND CIVIL ENGINEERS

Client	QUATTRO			
Project	SOUTHALL LANE, HAYES UB2 5XJ			
Title	RECYCLING PLANT PLAN			
Sheet Size	Original Scale	Designed/Drawn	Checked	Authorised
A3	As Shown	PR	GN	GN
Status	Drawing Number	Date	Date	Date
P	H11930-100	23.03.17	23.03.17	23.03.17
Rev				M

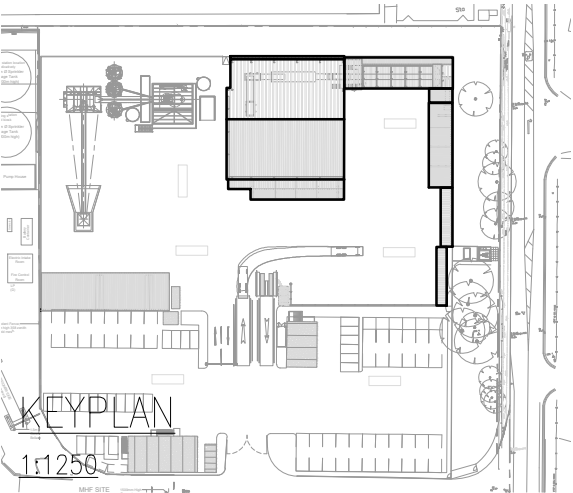
RECYCLING PLANT PLAN

1:500

Setting out dimensions,
walls and levels to
architects' drawings



- GENERAL NOTES:
- This drawing is copyright (C).
 - This drawing is to be read in conjunction with all relevant drawings and specifications.
 - This drawing shall not be scaled: use only figured dimensions. All dimensions are shown in millimetres and levels in metres above OS Datum.
 - Dimensions and conditions shall be verified on site. Any discrepancies between this drawing and site conditions shall be brought to the attention of the Engineer for resolution prior to placing orders or construction.
 - All work shall comply with the Building Regulations and the requirements of the Local Authority, current Codes of practice and British Standards.
 - Dimensions indicated thus: - *are to be confirmed on site.
 - For remainder of notes see dng no.H11930-100.
 - Our design is based upon the assumptions: Existing blackwork is assumed to be 100mm 3.5N in 1:6 mortar. Existing brickwork to be 20.5N in 1:6 mortar. Existing timbers to be grade C16. Unless assumed to exist over all existing openings. Wall ties assumed to be in good condition. Assumed minimum party wall thickness to be 225mm solid masonry wall construction.
 - Waterproofing details shown are indicative only. Architect to confirm final details.
 - Splice requirements to new steel beams to be allowed for by contractor as required. Splice design assumed responsibility of fabricator, unless specifically requested of S.Eng.
 - All structural steelwork shall be to BS EN 10025 & BS EN 10210, Grade S355 unless noted otherwise. All beams to be CE marked.
 - High risk of saturation and freezing (masonry most vulnerable is situated 150mm above and 150mm below finished ground level) durability classification to be a MX3.2, F2, S2 or S1*



AIR QUALITY ASSESSMENT

WASTE RECYCLING FACILITY AND CONCRETE BATCHING PLANT, SOUTHALL LANE, HAYES