London and Regional Properties

55 Fitzroy Park, London Borough of Camden

Construction Air Quality Assessment and Management Plan

October 2018

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Document Control

Project:	55 Fitzroy Park, London Borough of Camden
Client:	Geoff Springer
Job Number:	A108215
File Origin:	O:\Acoustics Air Quality and Noise\Active Projects

Document Checking:

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Issue	Date	Status
1	20th April 2018	First Issue
2	28th June 2018	Second Issue – updated client details
3	29th October 2018	Third Issue – Updated following comments

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1. Introduction

WYG Environment Planning Transport (WYG) have been commissioned to prepare a Construction Air Quality Assessment and Management Plan to support an application for the proposed construction of five dwelling at Fitzroy Park, London Borough of Camden, N6 6NB.

This report has been compiled using the London Borough of Camden's (LBC) CMP Proforma.

1.1 Site Location and Context

The approximate United Kingdom National Grid Reference (NGR) is approximately 527770, 186965. The Site is bounded to the north-west, north and east by existing residential dwellings and to the south-west by Hampstead Heath woodland. Reference should be made to Figure 1 for a map of the proposed development site and surrounding area.

2. Policy and Legislative Context

2.1 Documents Consulted

The following documents were consulted during the undertaking of this assessment:

Legislation and Best Practice Guidance

- National Planning Policy Framework, Department for Communities and Local Government, Revised July 2018;
- Planning Practice Guidance: Air Quality, March 2014;
- The Air Quality Standards Regulations (Amendments), 2016;
- The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, 2007;
- The Environment Act, 1995;
- Local Air Quality Management Technical Guidance LAQM.TG16, DEFRA, 2018;
- Design Manual for Roads and Bridges, Volume 11, Section 3, Part 1, HA 207/07 - Air Quality, Highways Agency, 2007;
- Land-Use Planning & Development Control: Planning for Air Quality, EPUK & IAQM, 2017; and,
- Guidance on the Assessment of Dust from Demolition and Construction, IAQM, 2014.

Websites Consulted

- Google maps (maps.google.co.uk);
- The UK National Air Quality Archive (www.airquality.co.uk);
- Department for Transport Matrix (www.dft.go.uk/matrix);
- emapsite.com;
- Multi-Agency Geographic Information for the Countryside (http://magic.defra.gov.uk/);
- Planning Practice Guidance (http://planningguidance.planningportal.gov.uk/); and
- London Borough of Camden Council (http://www.camden.gov.uk/).

Site Specific Reference Documents

- London Borough of Camden, Annual Status Report for 2016; and,
- Camden Local Plan, Adopted 3rd July 2017.

2.2 Background Guidance

In 2017, IAQM produced its *Guidance on land-use planning and development control: Planning for air quality 2017 (v1.2).* This provides guidance for defining the significance of an air quality impact arising from the operation of a new development, based on the magnitude of change (i.e. the increase or decrease in predicted concentrations as a result of a proposed development) and the sensitivity of the receptors (i.e. the air quality in the area with respect to the air quality objectives).

In 2006, the Greater London Authority (GLA) with the London Councils produced *The Control of Dust and Emissions from Construction and Demolition: Best Practice Guidance*, with the assistance of BRE and others. This was superseded by The Mayor of London's Control of Dust and Emissions During Construction and Demolition Supplementary Planning Guidance published July 2014.

In the development of this IAQM guidance there has been much debate over the evidence for the numbers used to define the risk categories. Given the state of knowledge these can only be indicative at the current time. The evidence on the distance over which impacts may occur is limited. Extensive monitoring of PM_{10} around construction sites has occurred since the GLA Best Practice Guidance was first published. However, there has been little or no attempt to pull this information together. It is often collected on a site by site basis, by developers who have no direct interest in extending the knowledge base by publishing the findings.

The updated IAQM/EPUK guidance published in October 2018, has been updated to reflect experience of its use. It is anticipated that further updates will be required in the future as the evidence base develops.

Local Air Quality Management

Under Section 82 of the Environment Act (1995) (Part IV) Local Authorities (LAs) are required to periodically review and assess air quality within their area of jurisdiction under the system of Local Air Quality Management (LAQM). This review and assessment of air quality involves assessing present and likely future air quality against the AQOs. If it is predicted that levels at the façade of buildings where members of the public are regularly present (normally residential properties) are likely to be exceeded, the LA is required to declare an Air Quality Management Area (AQMA). For each AQMA, the LA is required to produce an Air Quality Action Plan (AQAP), the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

2.3 Planning and Policy Guidance

National Policy

The National Planning Policy Framework (NPPF), revised July 2018, principally brings together and summarises the suite of Planning Policy Statements (PPS) and Planning Policy Guidance (PPG) which previously guided planning policy making. The NPPS states that:

> *'Planning policies and decision should sustain and contribute towards compliance with relevant limit values or national objectives for pollutant, taking into account the presence of Air Quality Management Areas or Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic or travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan'*

The Planning Practice Guidance (PPG) web-based resource was launched by the Department for Communities and Local Government (DCLG) on 6 March 2014 to support the National Planning Policy Framework and make it more accessible. A review of PPG: Air Quality identified the following guidance:

> *'When deciding whether air quality is relevant to a planning application, local planning authorities should consider whether the development would:*
>
> *Significantly affect traffic in the immediate vicinity of the proposed development site or further afield. This could be by generating or increasing traffic congestion; significantly changing traffic volumes, vehicle speed or both; or significantly altering the traffic composition on local roads. Other matters to consider include whether the proposal involves the development of a bus station, coach or lorry park; adds to turnover in a large car park; or result in construction sites that would generate large Heavy Goods Vehicle flows over a period of a year or more.*
>
> *Introduce new point sources of air pollution. This could include furnaces which require prior notification to local authorities; or extraction systems (including chimneys) which require approval under pollution control legislation or biomass boilers or biomass-fuelled CHP plant; centralised boilers or CHP plant burning other fuels within or close to an air quality management area or introduce relevant combustion within a Smoke Control Area.*
>
> *Expose people to existing sources of air pollutants. This could be by building new homes, workplaces or other development in places with poor air quality.*

Give rise to potentially significant impact (such as dust) during construction for nearby sensitive locations.

Affect biodiversity. In particular, is it likely to result in deposition or concentration of pollutants that significantly affect a European-designated wildlife site and is not directly connected with or necessary to the management of the site, or does it otherwise affect biodiversity, particularly designated wildlife sites.'

Local Policy

The London Borough of Camden (LBC) Local Plan (adopted 3rd July 2017) sets out the planning framework for guiding decisions on all development within the borough up to 2031. The following policies have been identified:

"Policy CC4 Air Quality

The Council will ensure that the impact of development on air quality is mitigated and ensure that exposure to poor air quality is reduced in the borough.

The Council will take into account the impact of air quality when assessing development proposals, through the consideration of both the exposure of occupants to air pollution and the effect of the development on air quality. Consideration must be taken to the actions identified in the Council's Air Quality Action Plan.

Air Quality Assessments (AQAs) are required where development is likely to expose residents to high levels of air pollution. Where the AQA shows that a development would cause harm to air quality, the Council will not grant planning permission unless measures are adopted to mitigate the impact. Similarly, developments that introduce sensitive receptors (i.e. housing, schools) in locations of poor air quality will not be acceptable unless designed to mitigate the impact.

Development that involves significant demolition, construction or earthworks will also be required to assess the risk of dust and emissions impacts in an AQA and include appropriate mitigation measures to be secured in a Construction Management Plan."

3. Assessment Methodology

The methodology used to determine the potential air quality effects of the preparation works has been derived from the IAQM 'Guidance on the Assessment of the Impacts of Dust from Demolition and Construction' document and is summarised in Section 4.

The following information sets out the adopted approach to the preparation work impact assessment in accordance with the aforementioned IAQM guidance[1].

Step 1 – Screen the Requirement for a more Detailed Assessment

An assessment is required if there are sensitive receptors within 350m of the site boundary, within 50m of the route(s) used by construction vehicles on the surrounding road network, or within 500m from the site entrance. A detailed assessment is also required if there is an ecological receptor within 50m of the site boundary.

Step 2A – Define the Potential Dust Emission Magnitude

Demolition

The dust emission magnitude for the demolition phase has been determined based on the below criteria:

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

Earthworks

The dust emission magnitude for the planned earthworks has been determined based on the below criteria:

- *Large:* Total site area >10 000m^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 >8m in height, total material moved >100,000 tonnes;
- *Medium*: Total site area 2,500m^2 – 10 000m^2, moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 4m-8m in height, total material moved 20 000 tonnes – 100,000 tonnes; and
- *Small:* Total site area <2,500 m^2, soil type with large grain size (e.g. sand), <5 heavy earth moving

[1] Institute of Air Quality Management 2014. *Guidance on the Assessment of dust from demolition and construction.*

vehicles active at any one time, formation of bunds <4 m in height, total material moved <10 000 tonnes, earthworks during wetter months.

Construction

The dust emission magnitude for the construction phase has been determined based on the below criteria:

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

Trackout

The dust emission magnitude for trackout has been determined based on the below criteria:

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

Step 2B - Defining the Sensitivity of the Area

Sensitivities of People to Dust Soiling Effects

- *High:*
  - Users can reasonably expect an enjoyment of a high level of amenity;
  - The appearance, aesthetics or value of their property would be diminished by soiling; and the people or property would reasonably expect to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land; and,
  - Indicative examples include dwellings, museums and other culturally important collections, medium- and long-term car parks and car showrooms.
- *Medium:*
  - Users can reasonably 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; and,

- Indicative examples include parks and places of work.

- *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;
  - 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; and,
  - Indicative examples include playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks and roads.

The sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout, using the following table:

Table 3.1 – Sensitivity of the Area to Dust Soiling Effects 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

Note - The likely routes the construction traffic will use should also be included to enable the presence of trackout receptors to be included in the assessment. As a general guidance, without site-specific mitigation, trackout may occur along the public highway up to 500 m from large sites (as defined in step 2A), 200 m from medium sites and 50 m from small sites, as measured from the site exit.

Sensitivities of People to the Health Effects of PM_{10}

- *High:*
  - Locations where members of the public are exposed over a period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day);
  - Indicative examples include residential properties. Hospitals, schools and residential care homes should also be considered as having equal sensitivity to residential areas for the purposes of this assessment.

- *Medium:*
  - Locations where the people exposed are workers, and exposure is over a period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day); and,
  - Indicative examples include office and shop workers, but will generally not include workers occupationally exposed to PM_{10}, as protection is covered by Health and Safety at Work legislation.

- *Low:*
  - Locations where human exposure is transient; and,
  - Indicative examples include public footpaths, playing fields, parks and shopping streets.

The sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout, using the following table:

Table 3.2 - Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Annual Mean PM_{10} Background Concentration	Number of Receptors	Distance from the 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
Medium	-	>10	High	Medium	Low	Low	Low
	-	1-10	Medium	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low	Low

Note - The likely routes the construction traffic will use should also be included to enable the presence of trackout receptors to be included in the assessment. As a general guidance, without site-specific mitigation, trackout may occur along the public highway up to 500 m from large sites (as defined in step 2A), 200 m from medium sites and 50 m from small sites, as measured from the site exit.

Sensitivities of Receptors to Ecological Effects

- *High:*
  - 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 Data List for Great Britain; and,
  - Indicative examples include a Special Area of Conservation (SAC) designated for acid heathlands or a local site designated for lichens adjacent to the demolition of a large site containing concrete (alkali) buildings.
- *Medium:*
  - 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; and,

- Indicative example is a Site of Special Scientific Interest (SSSI) with dust sensitive features.

- *Low:*
  - Locations with a local designation where the features may be affected by dust deposition; and,
  - Indicative example is a local Nature Reserve with dust sensitive features.

The sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout, using the following table:

Table 3.3 - Sensitivity of the Area to Ecological Impacts

Receptor Sensitivity	Distance from Source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

Note - The likely routes the construction traffic will use should also be included to enable the presence of trackout receptors to be included in the assessment. As a general guidance, without site-specific mitigation, trackout may occur along the public highway up to 500 m from large sites (as defined in step 2A), 200 m from medium sites and 50 m from small sites, as measured from the site exit.

Step 2C - Defining the Risk of Impacts

The risk of impacts with no mitigation is determined by combining the dust emission magnitude determined in Step 2A and the sensitivity of the area determined in Step 2B.

The following tables provide a method of assigning the level of risk for each activity.

Earthworks

Table 3.4 - Risk of Dust Impacts, Earthworks

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Construction

Table 3.5 - Risk of Dust Impacts, Construction

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Trackout

Table 3.6 - Risk of Dust Impacts, Trackout

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Low Risk	Negligible
Low	Low Risk	Low Risk	Negligible

Step 3 – Site Specific Mitigation

The dust risk categories for each of the four activities determined in Step 2C should be used to define the appropriate, site-specific mitigation measures to be adopted.

These mitigation measures are contained within section 8.2 of the IAQM Guidance on the Assessment of Dust from Demolition and Construction.

4. Baseline Conditions

4.1 Pollutant Sources

The main emissions during the works are likely to be dust and particulate matter generated during earth moving (particularly during dry months) or from onsite materials. The main potential effects of dust and particulate matter are:

- Visual - dust plume, reduced visibility, coating and soiling of surfaces leading to annoyance, loss of amenity, the need to clean surfaces;
- Physical and/or chemical contamination and corrosion of artefacts;
- Coating of vegetation and soil contamination; and,
- Health effects due to inhalation e.g. asthma or irritation of the eyes.

A number of other factors such as the amount of precipitation and other meteorological conditions will also greatly influence the amount of particulate matter generated.

Site activities can give rise to short-term elevated dust/PM_{10} concentrations in neighbouring areas. This may arise from vehicle movements, soiling of the public highway, demolition or windblown stockpiles.

4.2 Particulate Matter (PM_{10})

The UK Air Quality Standards seek to control the health implications of respirable PM_{10}. However, the majority of particles released from the works will be greater than this in size.

Works on site have the potential to elevate localised PM_{10} concentrations in the area. On this basis, mitigation measures should still be taken to minimise these emissions as part of good site practice.

4.3 Dust

Particles greater than 10µm are likely to settle out relatively quickly and may cause annoyance due to their soiling capability. There are no formal standards or criteria for nuisance caused by deposited particles, however, a deposition rate of 200mg/m^2/day is often presented as a threshold for serious nuisance though this is usually only applied to long term exposure as people are generally more tolerant of dust for a short or defined period. Significant nuisance is likely when the dust coverage of surfaces is visible in contrast with adjacent clean areas, especially when it happens regularly. Severe dust nuisance occurs when the dust is perceptible without a clean reference surface.

On site activities have the potential to suspend dust, which could result in annoyance of residents surrounding the site. Measures will be taken to minimise the emissions of dust as part of good site practice. Recommended mitigation measures proportionate to the risk associated with the development and based on best practice guidance are discussed in the following sections.

Three construction processes are considered; these are earthworks, construction and trackout. For each of these phases, the significance of the potential dust impacts is derived following the determination of a dust emission magnitude and the distance of activities to the nearest sensitive receptor, therefore assessing worst case impacts.

4.4 Nearby Sensitive Receptors

Receptors that are considered as part of the air quality assessment are primarily those existing receptors that are situated within the limits defined within Table 3.1 of Section 3.

The receptor locations are summarised in Table 4.1 and the spatial locations of all the receptors are illustrated in Figure 1.

Table 4.1 Sensitive Receptor Locations

Discrete Sensitive Receptor		UK NGR (m)	
		X	Y
R1	The Water House, Millfield Lane	527745	186988
R2	53 Fitzroy Park	527790	186977
R3	Sunbury, Fitzroy Park	527825	186988
R4	Ashridge, Fitzroy Park	527825	186967
R5	Kenview, Fitzroy Park	527825	186952
R6	Fitzroy Lodge, Fitzroy Park	527796	186911
R7	The Little House, Fitzroy Park	527718	187008
R8	49 Fitzroy Park	527754	187032
R9	51 Fitzroy Park	527771	187014
R10	1 Fitzroy Close	527821	187008
R11	2 Fitzroy Close	527842	187015
R12	3 Haversham Place	527860	186936
R13	2 Haversham Place	527849	186912
R14	Former 1 Haversham Place	527860	186892
R15	59 Fitzroy Park	527820	186871
R16	Former Fitzroy Farm, Fitzroy Park	527686	187048
R17	North London Bowling Club, Fitzroy Park	527696	187071
R18	Dancers End, Fitzroy Park	527717	187100
R19	Westwind, Fitzoy Park	527730	187083
R20	The Lodge, Fitzroy Park	527747	187069
R21	Farm End Cottage, Fitzroy Park	527749	187052
R22	4 Fitzroy Close	527805	187032
R23	3 Fitzroy Close	527831	187049
R24	5 Fitzroy Close	527838	187063
R25	5 Haversham Place	527899	186972
R26	4 Haversham Place	527876	186955
R27	7 Haversham Place	527893	186928
R28	24 West Hill Park	527915	186871
R29	25 West Hill Park	527911	186857

Discrete Sensitive Receptor		UK NGR (m)	
		X	Y
R30	26 West Hill Park	527897	186850
R31	25 Merton Lane	527875	186839

4.5 Nearby Ecological Receptors

Air quality impacts associated with the proposed re-development have the potential to impact on receptors of ecological sensitivity within the vicinity of the site. The Conservation of Habitats and Species Regulations (2017) require competent authorities to review planning applications and consents that have the potential to impact on European designated sites (e.g. Special Protection Areas).

A study was undertaken to identify any statutory designated sites of ecological or nature conservation importance within the extents of the dispersion modelling assessment. This was completed using the Multi-Agency Geographic Information for the Countryside (MAGIC) web-based interactive mapping service, which draws together information on key environmental schemes and designations. Following a search within a 1km radius of the site boundary two ecological receptors have been identified:

- Hampstead Heath Woods SSSI (Site of Specific Scientific Interest) 1;
- Hampstead Heath Woods SSSI 2; and,
- Hampstead Heath Ladies Swimming Pond.

These ecological receptors are within 1km of the proposed development. As such, the receptors have been included within the assessment.

Table 4.2 Sensitive Receptor Locations

Discrete Sensitive Receptor		UK NGR (m)	
		X	Y
E1	Hampstead Heath Woods SSSI 1	527095	187496
E2	Hampstead Heath Woods SSSI 2	527419	187018
E3	Kenwood Ladies' Bathing Pond	527638	186937

4.6 Assessment Results

Based on the methodology detailed in Section 3, the scale of the anticipated works has determined the potential dust emission magnitude for each process, as presented in the Table 4.4 below.

Table 4.4 Dust Emission Magnitude

Construction Process	Dust Emission Magnitude
Demolition	Small
Earthworks	Medium
Construction	Small
Trackout	Medium

The sensitivity of the surrounding area to each construction process has been determined following stage 2B of the IAQM guidance. The assessment has determined the area sensitivities as shown in the Table 4.3.

Table 4.5 Sensitivity of the Area

Source	Area Sensitivity		
	Dust Soiling	Health Effects of PM_{10}	Ecological
Demolition	Medium	Low	Low
Earthworks	Medium	Low	Low
Construction	Medium	Low	Low
Trackout	Medium	Low	Low

The dust emission magnitude determined in Table 4.2 has been combined with the sensitivity of the area determined in Table 4.3, to determine the risk of impacts prior to the implementation of appropriate mitigation measures. The potential impact significance of dust emissions associated with the construction phase, without mitigation, is presented below in Table 4.4.

Table 4.6 Impact Significance of Construction Activities without Mitigation

Source	Summary Risk of Impacts Prior to Mitigation		
	Dust Soiling	Health Effects of PM_{10}	Ecological
Demolition	Low	Negligible	Negligible
Earthworks	Medium	Low	Low
Construction	Low	Negligible	Negligible
Trackout	Low	Low	Low

Appropriate mitigation measures are detailed and presented in Section 7. Following the adoption of these measures, the subsequent impact significance of the construction phase is not predicted to be significant.

5. Air Quality & Dust Management Plan

This document ensures that

- Dust effects are considered as part of routine inspections;
- Dust are primarily controlled at source by good operational practices, including physical and management control measures; and
- All appropriate measures are taken to prevent or, where that is not reasonable practicable, to reduce emissions to air from the site at nearby receptors.

5.1 Definition of Dust Management Plan

The definition and the main purpose of the dust management plan are summarised below:

- A management plan is a live working document that formalises and describes how dust issues will be managed on site. The plan forms part of the operational management system (indeed it may form part of a site's wider Environmental Management System or Integrated Management System);
- The plan shows how dust will be managed and controlled so as to prevent or minimise impacts. As well as covering normal operations, it should anticipate and plan for abnormal events and foreseeable accidents and incidents;
- It is not an impact assessment; it is a mitigation/control measure; and
- It should not be complex; simple plans are needed, that can be easily actioned by the site operatives.

The dust risk categories have been determined in Section 4 for each of the three construction phase activities. The assessment has determined that the potential impact significance of dust emissions associated with the construction phase of the proposed development is 'high' risk at the worst affected receptors.

Using the methodology described in Section 3, appropriate site specific mitigation measures associated with the determined level of risk can be found in Section 8.2 of the IAQM Guidance on the Assessment of Dust from Demolition and Construction. The measures outlined in the London Plan 'Control of Dust and Emissions During Construction and Demolition' will be implemented as outlined below.

Control procedures will be implemented to avoid as far as is reasonably practicable the emission of dust and other particulates that would adversely affect the air quality to ensure there is no significant deterioration of current air quality as a result of the works.

An assessment has been undertaken based on IAQM guidance. The risk of dust emissions from site activities has been assessed based on:

- The activities being undertaken;
- The duration of each activity;
- The size of the site;
- The meteorological conditions; and
- The sensitivity and proximity of receptors.

Potential on site activities which will give rise to dust are: *demolition, earthworks, construction* and *trackout*.

Following a review of the site and proposed construction works, it has not been deemed necessary to carry out any monitoring on the site as part of the AQDMP. Therefore, best practice measures will be implemented. The required air quality and dust management mitigation measures are laid out below for each specific site activity.

5.2 General

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken;
- Carry out regular site inspections to monitor compliance with this ADMP, record inspection results, and make an inspection log available to the local authority when asked;
- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of site boundary, with cleaning to be provided if necessary. The daily site inspection checksheet is included in **Appendix A.**
- Increase the frequency of site inspections 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 dry or windy conditions.

5.3 On Site Activities

- Erect solid screens or barriers around dusty activities or the site boundary which are at least as high as any stockpiles on site;
- Where demolition of building is taking place, soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).

- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period;
- Avoid site runoff of water or mud;
- Keep site fencing, barriers and scaffolding clean using wet methods; and
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.

5.4 Materials and Stockpiling

- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover the equipment appropriately;
- 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;
- Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground;
- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable;
- Avoid scabbling (roughening of concrete surfaces) if possible;
- Avoid dry sweeping of large areas;
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable;
- Cover, seed or fence stockpiles to prevent wind whipping; and,
- Only remove the cover in small areas during work and not all at once

5.5 Vehicles and Plant

- Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM standards, where applicable;
    - An inventory of all Non-Road Mobile Machinery (NRMM) will be kept on-site and registered on 'http://nrmm.London/' showing the emission limits for all equipment and will be made available to local authority offices if required. All NRMM of net power between 37kW and 560kW will be required to meet Stage IIIA of EU Directive 97/68/EC. NRMM should be run on low sulphur diesel.
    - Arrangements should be made with the on-site vehicle drivers to ensure drivers do not leave vehicle engines idling unnecessarily during the construction period.
- Record all inspections of haul routes and any subsequent action in a site log book;

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use;
- Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on un-surfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate);
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport;
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable);
- 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;
- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
- 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; and,

5.6 Waste

- 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;
- Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods;
- Avoid explosive blasting, using appropriate manual or mechanical alternatives;
- Bag and remove any biological debris or damp down such material before demolition; an
- Avoid bonfires and burning of waste materials.

5.7 Communication with Neighbouring Residents

Good relations with people living and working in the vicinity of site operations are of paramount importance. Early establishment and maintenance of these relations throughout the carrying out of site operations will go some way towards allaying people's fears. It is suggested that good relations can be developed by keeping people informed of progress and by treating complaints fairly and expeditiously. The person, company or organization carrying out work on site should appoint a responsible person to liaise with the neighbouring residents and public. In this context, good public relations and communication are important. Contact methods (via telephone, email or social media) for the construction contractor should be openly available, allowing any complaints to be treated fairly and expeditiously.

The above methods should be developed and implemented through a stakeholder communication plan that also includes community engagement before the commencing of works on site.

Additionally, display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager. This should be displayed with the head or regional office contact information.

5.7.1 Complaints Management

Good relations can be developed by keeping people informed of progress and by treating complaints fairly and expeditiously. All complaints will be recorded, identifying cause(s) and appropriate measures to reduce emissions in a timely manner, and record measures taken. The complaints log will be made available to the local authority when requested.

Records of any exceptional incidents that cause high dust/air/noise/vibration emissions, either on – or off site will be kept in the log book along with the action taken to resolve the situation.

5.8 Emergency Deviation from Agreed Working Hours

In the case of work required in response to an emergency, the local authority and neighbouring residents will be advised as soon as reasonably practicable, for example, within two weeks of the emergency work is taking place.

Following the implementation of the mitigation measures detailed above, the impact significance of the construction phase is not considered to be significant.

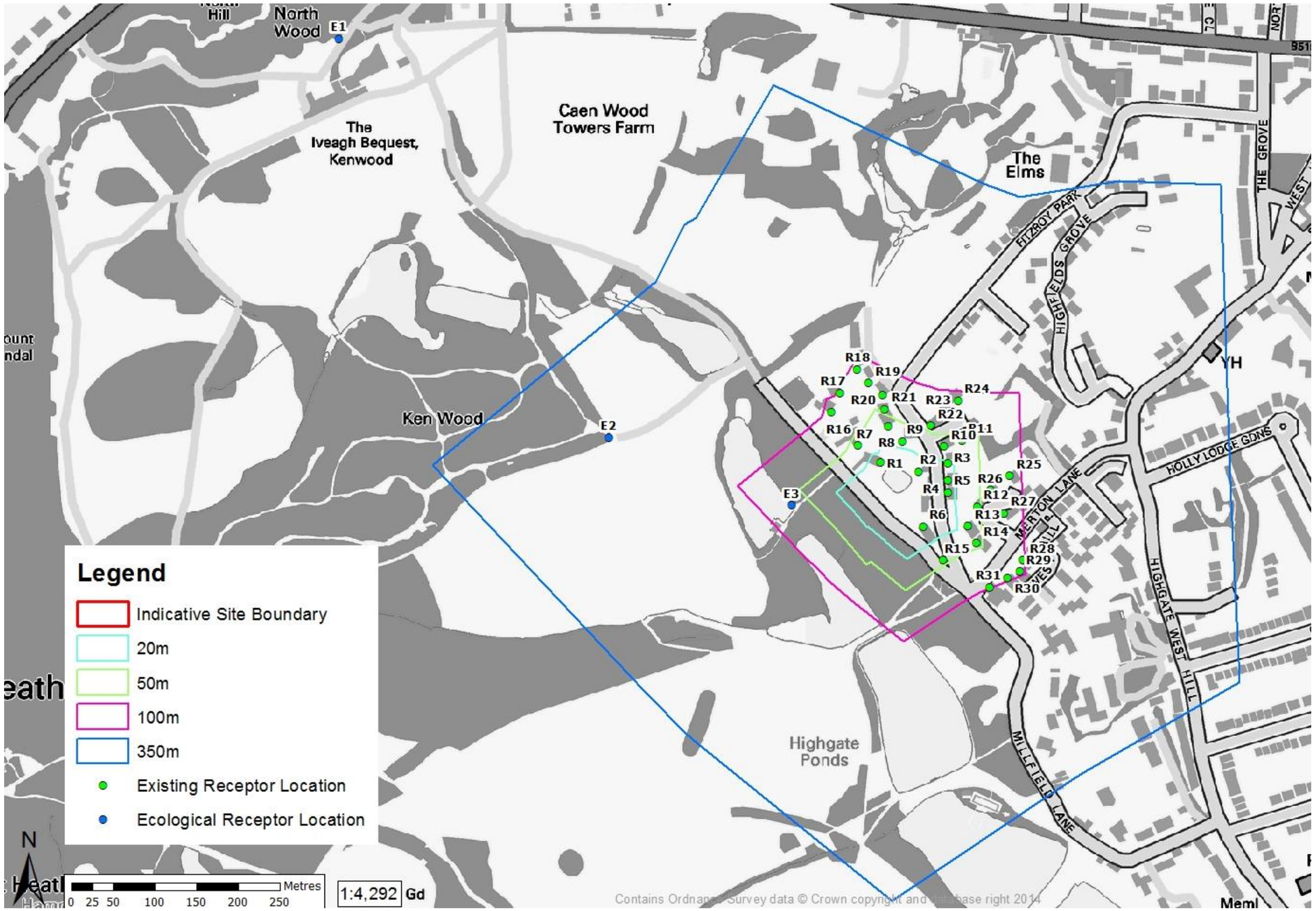
6. Conclusions

WYG have undertaken a Construction Phase Air Quality Assessment and Dust Management Plan for proposed construction of five dwellings at 55 Fitzroy Park, London Borough of Camden. This report is in accordance with the methodology and parameters described within this report.

Prior to the implementation of appropriate mitigation measures, the potential impact significance of dust emissions associated with the construction phase of the proposed development has potential as 'medium risk' at some worst affected receptors without mitigation. However, appropriate site specific mitigation measures have been recommended based on Section 8.2 of the IAQM Guidance on the Assessment of Dust from Demolition, Earthworks, Construction and Trackout. It is anticipated that with these appropriate mitigation measures in place, the risk of adverse effects due to emissions from the construction phase will not be significant.

Figures

Figure 1 Air Quality Assessment Area



Appendix A Daily Report Sheet

Daily Report Sheet

Site Manager		Date		Completed by	

	Location 1	Location 2	Location 3	Location 4
Start Time				
Wind Speed (m/s)				
Wind Direction				
Visible Dust Soiling (Y/N)				
Additional notes including site operations				
Actions Required?				