

APPENDIX 8.1

Construction Dust Assessment

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1.0 INTRODUCTION

1.1 Background

Golder Associates Ireland Ltd (Golder) have been commissioned to prepare this Environmental Impact Assessment Report (EIAR) on behalf of Atlas GP Ltd, as developer of the proposed Carmanhall Road Strategic Housing Development (SHD; hereafter the 'Proposed Development'). It represents the findings of an Environmental Impact Assessment (EIA) carried out for the Proposed Development and supports the overall planning application for the Proposed Development. This appendix supports the Air Quality chapter of the EIAR and considers the potential effects of the Proposed Development construction on air quality.

The Proposed Development comprises the construction of a residential build-to-rent apartment block, including 428 no. residential apartments. These will comprise 285 no. one bedroom, 94 no. two bedroom and 41 no. studio apartments across 6 to 17 no. storeys (above basement level). The height of the proposed building ranges between 6 and 17 no. storeys (above basement level). (see Figure 1). Of these apartments 413 no. will have access to private amenity space, in the form of a balcony or lawn/terrace, and 15 no. apartments will have access to a shared private roof terrace (142 m²) at ninth floor level.

A detailed description of the Proposed Development, its location, and site description can be found in Chapter 3 of this EIAR (Project Description).

1.2 Report Context

This report forms an Appendix to the Air Quality Assessment (EIAR Chapter 8,) dated February 2021 and should be read in conjunction with that report.

The report sets out a qualitative assessment of dust impacts (deposited dust and human health) from the Proposed Development during the construction phase has been undertaken in line with IAQM 'Guidance on the assessment of dust from demolition and construction' (IAQM 2014), making reference as appropriate to preceding EPUK guidance "Development Control: Planning for Air Quality" (EPUK 2017).

2.0 POLICY AND LEGISLATION CONTEXT

2.1 European Air Quality Directive

The European Union (EU) Directive on Ambient Air Quality Assessment and Management came into force in September 1996 (96/62/EC) and defines the policy framework for 12 air pollutants known to have harmful effects on human health and the environment. Air quality limit values (ambient pollutant concentrations not to be exceeded after a given date) for the pollutants are set through a series of Daughter Directives. The first Daughter Directive (1990/30/EC) sets limit values for NO₂ (amongst other pollutants) in ambient air.

Following the Daughter Directives, EU Council Directive 2008/50/EC came into force in June 2008, consolidating the existing air quality legislation, making provision for Member States to postpone attainment deadlines and allowing exemption from the obligation to limit values for certain pollutants, subject to strict conditions and assessment by the European Commission. Directive 2008/50/EC was transposed into Irish national legislation in 2011 through the Air Quality Standards Regulations 2011. The directive merged the four daughter directives and one Council decision into a single directive on air quality. The new Directive also introduced a new limit value for fine particulate matter (PM_{2.5}) but does not change the existing air quality standards.

2.2 National Air Quality Legislation

The Air Pollution Act (1987) is the primary legislation relating to air quality in Ireland and provides the means for local authorities to take the measures that they deem necessary to control air pollution.

The Air Quality Standards Regulations (2011) transpose the Directive on ambient air quality (2008/50/EC) into Irish law. These regulations establish limit values and thresholds for various pollutants in ambient air. The recent Environmental Protection Agency (EPA) report on Air Quality in Ireland (2019) considers the sources of particulates (transport emissions and solid fuel burning) and the potential associated health impacts.

The EPA monitor the levels of various pollutants against the standards set out in EU and Irish legislation. The EPA are the competent authority for annual reporting to the Minister for the Environment, Heritage and Local Government and the European Commission.

The Air Quality Standards (AQSS) – the background pollutant levels considered acceptable for human health and the environment – for nitrogen dioxide (NO₂) and particulate matter (PM₁₀ and PM_{2.5}) when measured as annual mean concentrations, are as follows:

- NO₂ - 40 µg/m³;
- PM₁₀ - 40 µg/m³; and
- PM_{2.5} - 25 µg/m³.

This assessment will consider the potential impacts relating to deposited dust and fine particulates only, while Appendix 8.2 of this EIAR Chapter 8 considers all of the pollutants.

There are 4 air quality Zones in Ireland, defined for air quality management and assessment purposes. Highly populated areas are classified as Zone A, with sparsely populated areas as Zone D. Sandyford is designated as a Zone A for air quality, as it is located in the Dublin Conurbation.

2.3 Relevant Guidance

In the absence of any specific Irish guidance, The Planning Practice Guidance for Air Quality (Department for Communities & Local Government, 2014 (amended 2019)) states that when deciding whether air quality is relevant to a planning application, considerations could include whether the development would give rise to potentially unacceptable impacts (such as dust) during construction for nearby sensitive locations.

The Institute of Air Quality Management “Guidance on the assessment of dust from demolition and construction” (IAQM 2014 (amended 2016)) sets out an approved method for undertaking construction impact assessment and has been used as the basis of this assessment.

3.0 POTENTIAL IMPACTS

For the purpose of this assessment, dust is defined as solid particles that are suspended in air or have settled out onto a surface after having been suspended in air. In line with the IAQM 2014 guidance, the main air quality impacts potentially arising during construction are considered to be:

- Dust deposition, resulting in the soiling of surfaces;
- Visible dust plumes, which are evidence of dust emissions;
- Elevated PM₁₀ concentrations, as a result of dust generating activities on the Site; and
- An increase in concentrations of airborne particles (and NO₂) due to vehicles and equipment used on site and vehicles accessing the Site.

3.1 Dust Soiling Effects

People and Property – Loss of Amenity

Loss of amenity may be caused by dust deposition resulting in the soiling of surfaces, which in turn causes annoyance and may result in complaints. The level at which soiling becomes an annoyance is highly subjective. Consequently, there are no universally agreed standards for assessing for example the risk of dust soiling. Mean rates of dust deposition, based upon gravimetric analysis, are generally used to indicate any potential impact, with guideline values suggesting a mean average rate of 350 mg/m²/day is often an adequate criterion to assess dust deposition.

Damage to Sensitive Habitats

Dust soiling can also affect sensitive habitats. Direct impacts may occur on vegetation or aquatic ecosystems. For example, dust coating plant foliage during long dry periods may adversely affect photosynthesis and other biological functions. Subsequent rainfall removing the deposited dust can rapidly leach chemicals into the soil. Indirect impacts may occur on fauna (e.g., deterioration of foraging habitats).

Visible Dust Plumes

Visible dust plumes are evidence of dust emissions and have been known to be cited as causing loss of amenity. Plumes are often related to people making complaints but are not necessarily sufficient to be a legal nuisance.

3.2 Human Health Effects – Elevated PM₁₀ Concentrations

While dust deposition will arise from the deposition of dust in all size fractions, the ambient dust relevant to human health outcomes will be that measured as PM₁₀. PM₁₀ concentration in the vicinity of the development site may become elevated as a result of dust generating activities, including exhaust emissions from non-road mobile machinery and vehicles accessing the Site.

Exhaust Emissions

The 2019 EPA report on Air Quality in Ireland considers the sources of particulates (transport emissions and solid fuel burning) and the potential associated health impacts.

The IAQM 2014 guidance notes that “experience of assessing the exhaust emissions from on-site plant and site traffic suggests that they are unlikely to make a significant impact on local air quality, and in the vast majority of cases will not need to be quantitatively assessed.” Reference is made to a threshold of >200 heavy goods vehicles (HGVs) per day over a period of a year or more as being indicative of the need for quantitative assessment of construction vehicle emissions.

4.0 ASSESSMENT METHODOLOGY

The dust assessment has been undertaken based on the IAQM 2014 guidance.

Activities on construction sites are classified into four types to reflect their different potential effects:

- Demolition (which is omitted from this assessment as the Project will not involve any demolition works);
- Earthworks;
- Construction; and
- Trackout.

The following steps, as defined in the IAQM 2014 guidance, were followed when assessing potential impacts:

- Step 1 – Screen the requirement for detailed assessment – Applicable human and ecological receptors were identified and the distance to the Proposed Development and relevant construction routes determined;
- Step 2 – Assess the risk of dust effects – The potential risk of dust impact occurring for each activity was determined, based on the magnitude of the potential dust emissions and the sensitivity of the receptors;
- Step 3 – Identify the need for site-specific mitigation. Based on the risk of impact occurring, site-specific mitigation measures were determined; and
- Step 4 – Define (residual) impacts and their significance. The significance of the potential residual dust effects (taking mitigation into account) for each activity was determined.

5.0 ASSESSMENT OF EFFECTS

5.1 Step 1 - Screening

The IAQM 2014 guidance screening criteria have been applied to determine whether detailed assessment is required. A detailed assessment is deemed necessary if there is:

A human receptor within 350 m of the boundary of the site or 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s); or

An ecological receptor within 50 m of the boundary of the site or 50 m of the route(s) used by construction vehicles on the public highway up to 500 m from the site entrance(s).

There are approximately 20 residential, health and leisure receptors within 350 m of the Site and applicable construction routes. This includes buildings, e.g., apartment blocks and not the individual residences contained within these.

Human receptors are largely apartment blocks located to the east, west and northwest of the Site (e.g., Time Place Apartment Building to the west and South Central Apartments to the north west) and the edge of Tipperstown located to the east of the Site at the edge of the study area. There are a small number of health facilities located within 100 m of the Site boundary and there are many commercial receptors located at various distances and directions from the Site boundary. There is an auto sales centre located approximately 100 m to the north, which would be particularly sensitive to the effects of dust soiling.

The nearest human receptor to the Site is a health facility (MedLab Pathology) located approximately 40 m east of the Site boundary area. The nearest residential receptor to the Site is an apartment block (The Forum) located approximately 120 m north of the Site boundary area. Dust will be generated during construction of the Proposed Development, which may have adverse effects on local sensitive receptors (e.g., residents living nearby).

A review of publicly available information indicates that there are no statutory (international or national) ecological receptors within 50 m of the Site or applicable construction routes. It can therefore be concluded, as there are no statutory receptors within the distance defined by the above criteria, that the level of risk to ecological sites is negligible, and any impacts will be not significant.

Therefore, assessment of potential impacts on ecological receptors has been scoped out and is not considered further in this assessment. As such, a detailed assessment of potential impacts on ecological receptors is not required.

The construction dust assessment study area including identified receptors is included below as Figure 1.

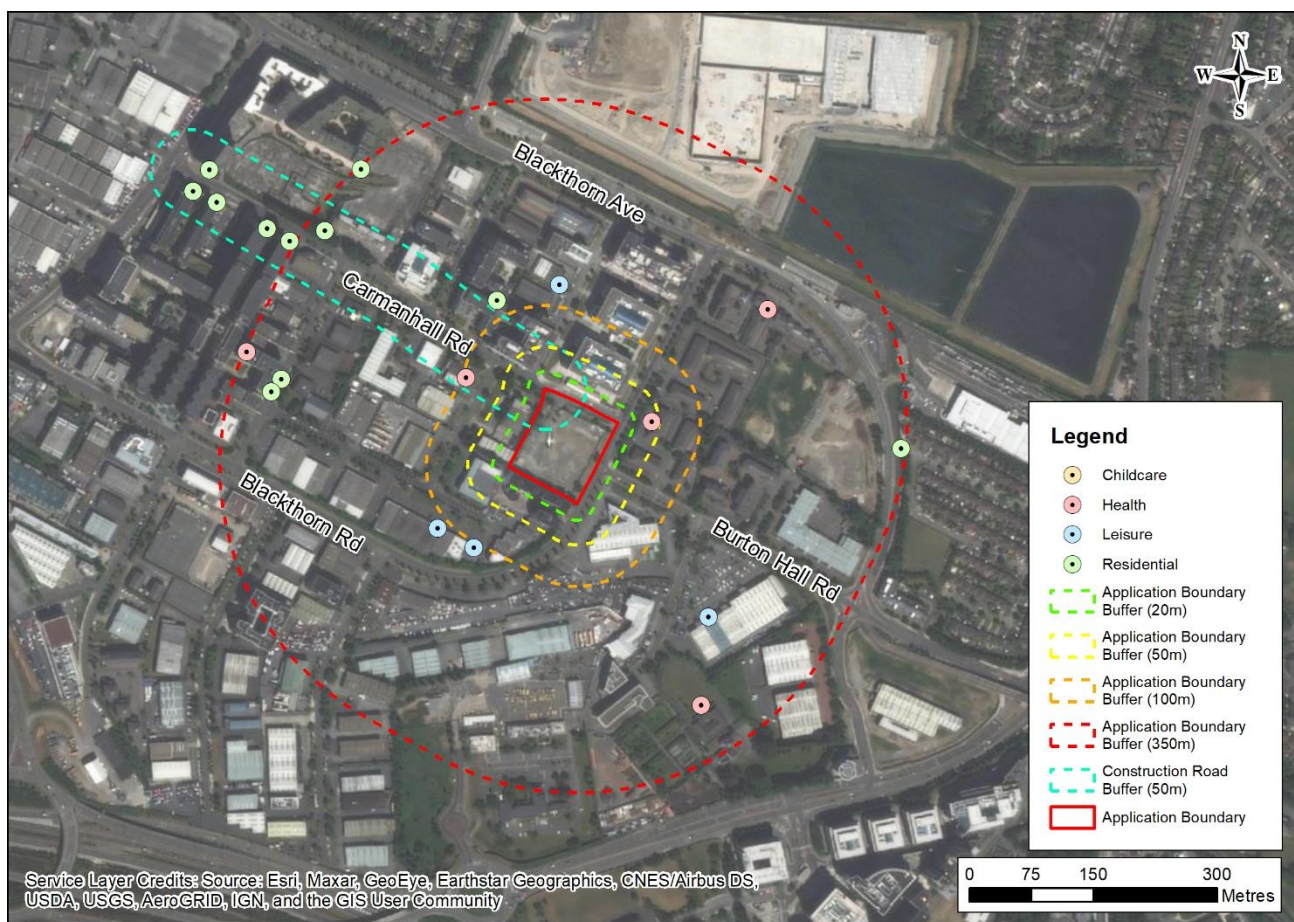


Figure 1: Construction Dust Assessment Study Area and Identified Receptors

The number of construction vehicles will be dependent on the appointed Man Contractors methodology and sequencing of works, however due to the size of the development it is not anticipated that the maximum number of Heavy Duty Vehicle (HDV) (>3.5 tonnes) Annual Average Daily traffic (AADT) movements during the construction period, will be above the threshold (100 AADT) for a quantitative assessment of construction traffic referred to in the IAQM 2017 planning guidance (Table 6.2) or the 200 HDV AADT screening criteria defined in the Design manual for Roads and Bridges (DMRB) (LA105 Air Quality, 2019). Therefore, a quantitative assessment of construction vehicle emissions has not been undertaken and the emissions are considered not significant.

5.2 Step 2 – Assess the Risk of Dust Impacts

In accordance with the IAQM 2014 guidance, the risk of dust arising in sufficient quantities to cause annoyance or health impacts has been determined using four risk categories: negligible, low, medium and high risk. The risk category allocation is undertaken independently for the three types of dust releasing activities relevant to this Project: earthworks, construction and trackout.

A site is allocated a risk category based on two factors:

- The scale and nature of the works, which determines the potential dust emission magnitude as small, medium or large (Step 2A); and
- The sensitivity of the area of dust impacts, which is defined as low, medium or high (Step 2B).

These two factors are then combined in Step 2C to determine the risk of dust impact with no mitigation required.

2A – Defining Potential Dust Emission Magnitude

The potential dust emission magnitude is based on the scale of the anticipated works and associated activities and classified as small, medium or large, as defined in the IAQM 2014 guidance, as follows.

Earthworks

The earthworks activities expected at the Proposed Development in conjunction with construction have been classified as medium based on the following:

- The total development gross external area is anticipated to be between 2,500 to 10,000 m²;
- There are likely to be 5 to 10 heavy earth moving vehicles active at any one time; and
- There is no soil cover mapped for the proposed Development; only made ground and below this Glacial Till/Boulder Clay has been found to be present, which are unlikely to be prone to suspension when dry.

Construction

The construction activities expected at the Proposed Development have been classified as large based on the following:

- The total building volume being constructed is likely to be more than 100,000 m³; and
- Construction materials will include some potentially dusty construction materials including stone and brick in addition to steel, metal cladding and glazing, which have a low dust generating potential.

Trackout

The trackout activities expected at the Proposed Development have been classified as medium based on the following:

- Worked surface materials will have a low potential for dust release (made ground and glacial till/ boulder clay); and
- The number of outward movements associated with the construction phase are not yet known but as no demolition works are being undertaken as part of the Proposed Development, it would be anticipated to average 10-50 HDV movements per day, although the exit roads are paved, therefore minimising the potential for resuspension.

A summary of the anticipated dust emission magnitude for each activity is provided in Table 1.

Table 1: Dust Emission Magnitude

Activity	Dust Emission Magnitude
Earthworks	Medium
Construction	Large
Trackout	Medium

2B – Defining the Sensitivity of the Area

The following were taken into consideration when determining the sensitivity of the area to dust soiling and the human health impacts of PM₁₀.

- The Proposed Development is located close to residential receptors, which are considered to have a high sensitivity to dust soiling effects;
- There are approximately 20 residential, health and leisure receptors within 350 m of the Proposed Development and applicable construction routes. This includes buildings, e.g., apartment blocks and not the individual residences contained within these, which are anticipated to be in excess of 100.
- No monitoring of PM₁₀ is undertaken in Sandyford or the surrounding area. EPA records (2019 data) give an estimated annual average background concentration of 13.6 µg/m³ for other monitored locations in the Dublin Zone A air quality zones (Table 2); and
- There are some natural shelters (e.g., trees - which can trap particulates) found in the vicinity of the study area, the majority of which will be retained.

The sensitivity of the area has been assessed independently for potential dust soiling effects on people and property and the potential human health impacts from elevated PM₁₀ concentrations.

Table 2: Annual Mean Monitoring Data for Suburban Dublin Zone A Stations (2019)

	Monitoring Location	Concentration (µg/m ³)
PM ₁₀	Dun Laoghaire	12
	Blanchardstown	19
	Ballyfermot	14
	Tallaght	12
	Phoenix Park	11
	Average	13.6

Dust Soiling Effects on People and Property

The specific sensitivity of receptors in the area can be classified as high, medium and low. Examples for high sensitivity receptors with regard to dust soiling effects include residential dwellings, hospitals, museums and other culturally important collections, as well as medium and long-term car parks/ car show rooms. Medium sensitivity receptors include parks, places of work (commercial & industrial) and leisure facilities. Indicative examples for low sensitivity receptors include playing fields, farmland, footpaths, short-term car parks and roads. The sensitivity of the area to dust soiling effects has been derived based on receptor sensitivity, number of receptors and distance from the Proposed Development boundary, as shown in Table 3.

Table 3: Sensitivity of the Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number of Receptors	Distance (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

Based on the above assessment criteria, the sensitivity of the area to dust soiling effects on people and property has been determined as medium for earthworks and construction due to the presence of 1 – 10 commercial and industrial receptors (medium receptor sensitivity) located within 20 m of the Proposed Development boundary. There are residential properties (high receptor sensitivity) located within 350 m of the Proposed Development boundary, but due to the distance from the boundary these generate a low sensitivity classification. The sensitivity of the area to dust soiling effects on people and property has been determined as high for trackout due to the presence of >100 residential receptors (high receptor sensitivity) in 5 apartment buildings located within 20 m of the construction route. This classification takes a worst-case approach and assesses effects based on the closest receptors within 20 m of the development boundary or the construction route.

Human Health Impacts

The specific sensitivity of receptors in the area to human health impacts can be classified as high, medium and low. Examples for high sensitivity receptors, with regard to human health impacts, include residential properties and health facilities. Medium sensitivity receptors include places of work. Indicative examples for low sensitivity receptors include public footpaths, playing fields, parks and shopping streets. The sensitivity of the area to human health impacts has been derived based on receptor sensitivity, number of receptors, annual mean PM₁₀ concentration and distance from the Proposed Development boundary, as shown in Table 4.

Table 4: Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Annual Mean PM10 Concentration	Number of Receptors	Distance (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	<24 µg/m ³	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low	Low

Publicly available EPA background data¹ has been reviewed for similar Zone A air quality areas in the absence of up-to-date background data for Sandyford. The data gives an average annual PM₁₀ concentration of 13.6 µg/m³. The sensitivity of the study area to human health impacts has therefore been determined as low for earthworks and construction due to the presence of 1 – 10 commercial and industrial receptors (medium receptor sensitivity) located within 20 m of the Proposed Development boundary. There are residential properties (high receptor sensitivity) located within 350 m of the development boundary, but due to the distance from the boundary these generate a low sensitivity classification. The sensitivity of the area to dust soiling effects on people and property has been determined as medium for trackout due to the presence of >100 residential receptors (high receptor sensitivity) in 5 apartment buildings located within 20 m of the construction route. This classification takes a worst-case approach and assesses effects based on the closest receptors within 20 m of the development boundary or the construction route.

2C - Defining the Risk of Impacts

To define the risk of impacts from dust soiling effects and human health impacts, the emission magnitude has been combined with the sensitivity of the area to determine the potential risk of impacts with no mitigation applied. Table 5, Table 6 and Table 7 depict the assessment matrix used for earthworks, construction and trackout.

Table 5: Risk of Dust Impacts Matrix - Earthworks

Sensitivity of Area	Dust Emission Magnitude		
	<i>Large</i>	<i>Medium</i>	<i>Small</i>
<i>High</i>	High Risk	Medium Risk	Low Risk
<i>Medium</i>	Medium Risk	Medium Risk	Low Risk
<i>Low</i>	Low Risk	Low Risk	Negligible

Table 6: Risk of Dust Impacts Matrix - Construction

Sensitivity of Area	Dust Emission Magnitude		
	<i>Large</i>	<i>Medium</i>	<i>Small</i>
<i>High</i>	High Risk	Medium Risk	Low Risk
<i>Medium</i>	Medium Risk	Medium Risk	Low Risk
<i>Low</i>	Low Risk	Low Risk	Negligible

Table 7: Risk of Dust Impacts Matrix - Trackout

Sensitivity of Area	Dust Emission Magnitude		
	<i>Large</i>	<i>Medium</i>	<i>Small</i>
<i>High</i>	High Risk	Medium Risk	Low Risk
<i>Medium</i>	Medium Risk	Low Risk	Negligible
<i>Low</i>	Low Risk	Low Risk	Negligible

¹<https://www.epa.ie/media/Summary%20Data%20Tables%20-%20202019.pdf>

Taking into consideration the conclusions from steps 2A and 2B, the risk of unmitigated dust impacts for each activity are provided in Table 8.

Table 8: Risk of Unmitigated Dust Impacts

	Risk		
	Earthworks	Construction	Trackout
Dust Soiling	Medium	Medium	Medium
Human Health	Low	Low	Low
Ecological	Not applicable – no ecological receptors within study area		

In summary, it is considered that prior to mitigation the risk of dust soiling and human health impact is medium to low for earthworks, construction and trackout activities associated with the Proposed Development.

5.3 Step 3 – Site-Specific Mitigation Measures

The dust risk categories prescribed to each of the three construction activities have been used to define an appropriate, site-specific mitigation scheme, as detailed in Table 9.

Table 9: Required Site-Specific Mitigation Measures to be included in the CEMP

Activity	Mitigation Measure	Implementation Level
Communication	Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	Mandatory
	Display the name and contact details of person(s) accountable for air quality and dust issues on the Site boundary.	Mandatory
	Display the head or regional office contact information.	Mandatory
	Develop and implement a Dust Management Plan (DMP) appropriate to the level of anticipated dust risk and detailing mitigation measures during construction activities.	Mandatory
Site Management	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.	Mandatory
	Make the complaints log available to the Dún Laoghaire Rathdown County Council when asked.	Mandatory
	Record any exceptional incidents that cause dust and/or air emissions, either on-or off-site, and the action taken to resolve the situation in the log book.	Mandatory
Monitoring	Undertake daily on and offsite inspection, where receptors are nearby, to monitor dust, record	Recommended

Activity	Mitigation Measure	Implementation Level
	inspection results and make the log available to the Dún Laoghaire Rathdown County Council when asked. This could include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100m of the boundary, with cleaning to be provided if necessary.	
	Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the Dún Laoghaire Rathdown County Council if requested.	Mandatory
	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.	Mandatory
	If required by the DMP, agree any dust deposition monitoring locations with the Dún Laoghaire Rathdown County Council. As required, where possible commence baseline monitoring at least three months before work commences.	Mandatory
Preparing and maintaining the Site	Plan site layout so that machinery and dust causing activities including stockpiling are located away from receptors, as far as is possible.	Mandatory
	Erect solid screens or barriers around dusty activities or the site boundary which are at least as high as any stockpiles on site.	Mandatory
	Fully enclose site or specific operations, where possible, when there is a high potential for dust production.	Mandatory
	Avoid site runoff of water or mud.	Mandatory
	Keep site fencing, barriers and scaffolding clean using wet methods.	Mandatory
	Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on-site.	Mandatory
	Cover seed or fence stockpiles to prevent wind shipping.	Mandatory
Operating vehicle/	Ensure all vehicles switch off engines when stationary – no idling vehicles.	Mandatory

Activity	Mitigation Measure	Implementation Level
machinery and sustainable travel	Avoid the use of diesel or petrol-powered generators and use mains electricity or battery powered equipment where practicable.	Mandatory
	Impose and signpost a maximum speed limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas.	Recommended
Construction Activities	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.	Mandatory
	Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.	Mandatory
	Use enclosed chutes and conveyors and covered skips.	Mandatory
	Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	Mandatory
	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.	Mandatory
Waste Management	Avoid bonfires and burning of waste materials.	Mandatory
Earthworks	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.	Recommended
	Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.	Recommended
	Only remove the cover in small areas during work and not all at once.	Recommended
General Construction	Avoid Scabbling (roughening of concrete surfaces)	Recommended
	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.	Mandatory

Activity	Mitigation Measure	Implementation Level
	Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.	Recommended
	For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.	Recommended
Trackout	Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site.	Recommended
	Avoid dry sweeping of large areas.	Recommended
	Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	Recommended
	Record all inspections of haul routes and any subsequent action in a site log book.	Recommended
	Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	Recommended

These recommended measures will be included in the Construction Environmental Management Plan (CEMP) (incorporating a DMP, if required) and agreed with the Dún Laoghaire Rathdown County Council Environmental Health Officer prior to construction works commencing.

5.4 Determination of Residual Effect Significance

The IAQM 2014 guidance states that “in the case of construction it is assumed that mitigation (secured by planning conditions, legal requirements or required by regulations) will ensure that a potentially significant adverse effect will not occur, so the residual effect will normally be ‘not significant’”.

Following the application of the site-specific mitigation measures set out in Section 5.3, it is therefore considered that the residual effects of dust deposition and related human health impacts associated with the construction phase of the Proposed Development will be not significant.

6.0 CONCLUSIONS

With regard to potential impacts during the construction phase, it is concluded that:

- The nearest residential receptor is an apartment block located approximately 120 m north of the Proposed Development boundary;
- There are greater than 100 residential receptors within 50m of the construction route;
- There are 5 – 10 places of work located within 20 m of the Proposed Development boundary;
- No monitoring of PM₁₀ is undertaken in the vicinity of the Proposed Development. EPA records (2019 data) give an estimated annual average background concentration of 13.6 µg/m³ for similar Zone A air quality zones;

- Taking the above into consideration, the sensitivity of the surrounding area to dust soiling effects is considered to be medium for earthworks and construction and high for trackout. The sensitivity of the surrounding area to human health impacts is considered to be low for earthworks and construction and medium for trackout;
- Prior to mitigation, the potential risk of dust soiling and human health effects are determined to be medium to low during earthworks, construction trackout;
- Appropriate mitigation measures have been recommended and will be included in the CEMP to effectively control the effects during the construction phase; and
- Therefore, it is considered that the residual effects associated with the construction phase of the proposed Development will be not significant.

7.0 REFERENCES

Environmental Protection UK / Institute of Air Quality Management (EPUK/IAQM, 2017) Land-Use Planning and Development Control: Planning for Air Quality, v1.2, 2017.

Institute of Air Quality Management (IAQM, 2014) Guidance on the assessment of dust from demolition and construction v1.1, 2016.

Environmental Protection Agency (EPA, 2019) Monitoring Data Archives, last accessed 16 February 2021, available at: <<https://www.epa.ie/media/Summary%20Data%20Tables%20-%202019.pdf>>