

As indicated in Table 22, 90.4th %ile 24-hour PM₁₀ PECs were below the AQO of 50µg/m³ at all sensitive receptor locations for all meteorological data sets.

Reference should be made to Figure 9 for a graphical representation of predicted 24-hour mean PM₁₀ PC concentrations throughout the assessment extents.

The significance of predicted impacts on 24-hour mean PM₁₀ concentrations at the sensitive receptors are summarised in Table 23. These consider the maximum predicted change in concentration from the five meteorological datasets as a worst-case.

Table 23 Predicted Impacts on 24-hour Mean PM₁₀ Concentrations

	Receptors	Predicted Concentration as Proportion of AQO (PC) (%)	Impact Significance
R1	Residential - Steele Close	Less than 10	Negligible
R2	Residential - Oakmount Road	Less than 10	Negligible
R3	Residential - Mount Drive	Less than 10	Negligible
R4	Residential - Judd Close	Less than 10	Negligible
R5	Residential - Leah Gardens	Less than 10	Negligible
R6	Residential - Leigh Road	Less than 10	Negligible
R7	Residential - Leigh Road	Less than 10	Negligible
R8	Residential - Belmont Road	Less than 10	Negligible
R9	Residential - Leigh Road	Less than 10	Negligible

As indicated in Table 23, impacts on 24-hour mean PM₁₀ concentrations as a result of the proposed development were predicted to be **negligible** at all sensitive receptors. This is classified as **not significant**, in accordance with the stated guidance.

Carbon Monoxide

Predicted 100th %ile 8-hour rolling mean CO PECs at the sensitive receptors, inclusive of background levels are summarised in Table 24.

Table 24 Predicted 100th %ile 8-hour rolling mean CO Concentrations

	Receptors	Predicted 100 th %ile 8-hour rolling mean CO PEC (µg/m ³)				
		2015	2016	2017	2018	2019
R1	Residential - Steele Close	988.1	937.9	988.6	935.1	975.2
R2	Residential - Oakmount Road	1,048.1	1,076.1	1,086.1	1,020.0	1,039.7
R3	Residential - Mount Drive	942.4	931.3	917.5	980.9	949.5
R4	Residential - Judd Close	941.9	938.5	1,038.4	994.1	991.2
R5	Residential - Leah Gardens	930.1	913.6	957.9	956.9	924.4
R6	Residential - Leigh Road	943.4	957.3	942.0	978.4	976.6

R7	Residential - Leigh Road	896.2	917.2	922.6	925.2	932.4
R8	Residential - Belmont Road	873.8	892.4	899.1	877.8	930.1
R9	Residential - Leigh Road	885.9	921.3	896.3	905.0	916.1

As indicated in Table 24, 100th %ile 8-hour rolling CO PECs were below the AQO of 10,000µg/m³ at all sensitive receptor locations for all meteorological data sets.

Reference should be made to Figure 10 for a graphical representation of predicted 8-hour rolling mean CO PC concentrations throughout the assessment extents.

The significance of predicted impacts on 8-hour rolling mean CO concentrations at the sensitive receptors are summarised in Table 25. These consider the maximum predicted change in concentration from the five meteorological datasets as a worst-case.

Table 25 Predicted Impacts on 8-hour Rolling Mean CO Concentrations

	Receptors	Predicted Concentration as Proportion of AQO (PC) (%)	Impact Significance
R1	Residential - Steele Close	Less than 10	Negligible
R2	Residential - Oakmount Road	Less than 10	Negligible
R3	Residential - Mount Drive	Less than 10	Negligible
R4	Residential - Judd Close	Less than 10	Negligible
R5	Residential - Leah Gardens	Less than 10	Negligible
R6	Residential - Leigh Road	Less than 10	Negligible
R7	Residential - Leigh Road	Less than 10	Negligible
R8	Residential - Belmont Road	Less than 10	Negligible
R9	Residential - Leigh Road	Less than 10	Negligible

As indicated in Table 25, impacts on 8-hour rolling mean CO concentrations as a result of the proposed development were predicted to be **negligible** at all sensitive receptors. This is classified as **not significant**, in accordance with the stated guidance.

Conclusion

Build Energy was commissioned by Morgan Sindall Construction & Infrastructure Ltd to undertake an Air Quality Assessment in support of a planning application for a new Fire Training Facility on land off Leigh Road, Eastleigh

Operation of the Fire Training Facility will result in atmospheric emissions of combustion gases. These have the potential to cause air quality impacts at sensitive locations within the vicinity of the site. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions and quantify potential effects.

Dispersion modelling was undertaken in order to predict pollutant concentrations at sensitive locations as a result of emissions from the development. Impacts at sensitive receptors were quantified and the results compared with the relevant AQOs and significance criteria.

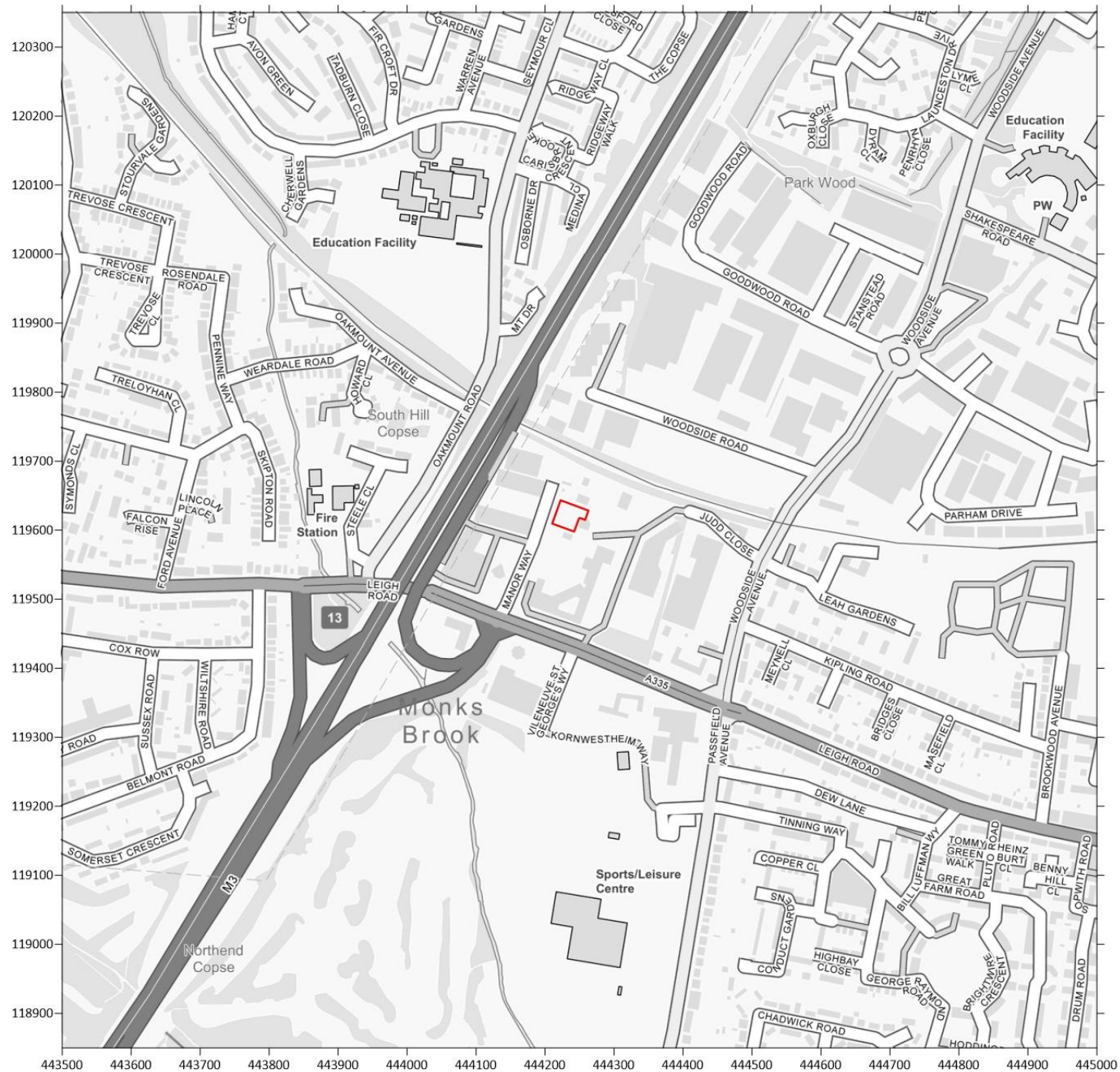
Predicted concentrations of all pollutants were below the relevant AQOs at all locations of human exposure for all meteorological data sets modelled. Review of the dispersion modelling results indicated that impacts on annual mean and short term pollutant concentrations were predicted to be **negligible** at all receptors. As such, overall impacts are considered to be **not significant** in accordance with the IAQM guidance.

Based on the assessment results, air quality issues are not considered a constraint to planning consent for the proposals.

Abbreviations

ADM	Atmospheric Dispersion Modelling
AQLV	Air Quality Limit Value
AQMA	Air Quality Management Area
AQO	Air Quality Objective
AQS	Air Quality Strategy
CERC	Cambridge Environmental Research Consultants
CO	Carbon Monoxide
DEFRA	Department for Environment, Food and Rural Affairs
EA	Environment Agency
EBC	Eastleigh Borough Council
IAQM	Institute of Air Quality Management
LA	Local Authority
LAQM	Local Air Quality Management
NGR	National Grid Reference
NO ₂	Nitrogen dioxide
NO _x	Oxides of nitrogen
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance
PM	Particulate Matter
PM ₁₀	Particulate matter with an aerodynamic diameter of less than 10µm
PM _{2.5}	Particulate matter with an aerodynamic diameter of less than 2.5µm
z ₀	Roughness length

Figures



Legend



Site Boundary

Title

Figure 1 - Site Location Plan

Project

Air Quality Assessment
Leigh Road, Eastleigh

Project Reference

BE2763

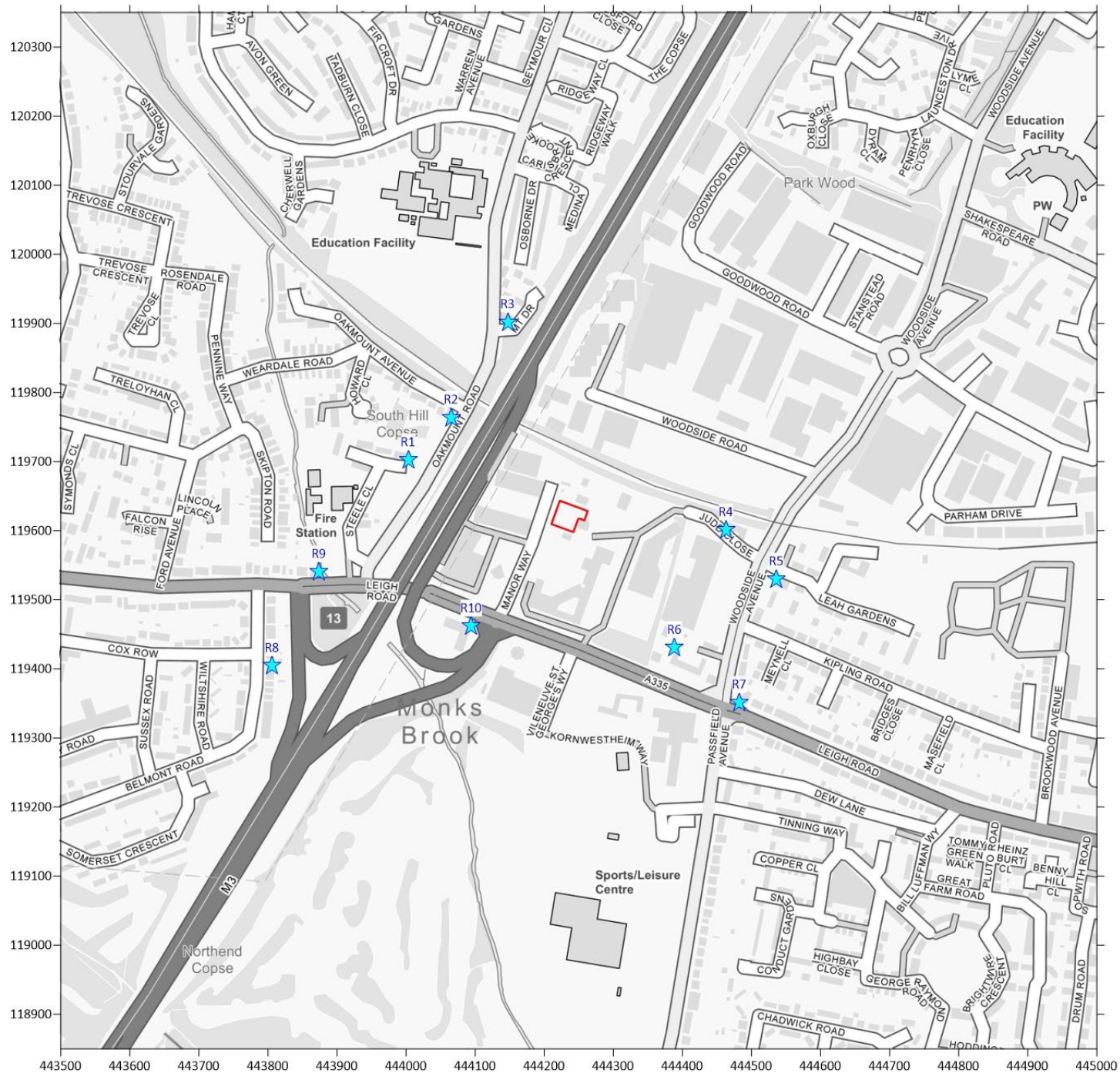
Client

Morgan Sindall Construction &
Infrastructure Ltd

Contains Ordnance Survey Data
© Crown Copyright and Database Act 2019







Legend



Site Boundary



Human Receptor

Title

Figure 3 - Sensitive Human Receptor Locations

Project

Air Quality Assessment
Leigh Road, Eastleigh

Project Reference

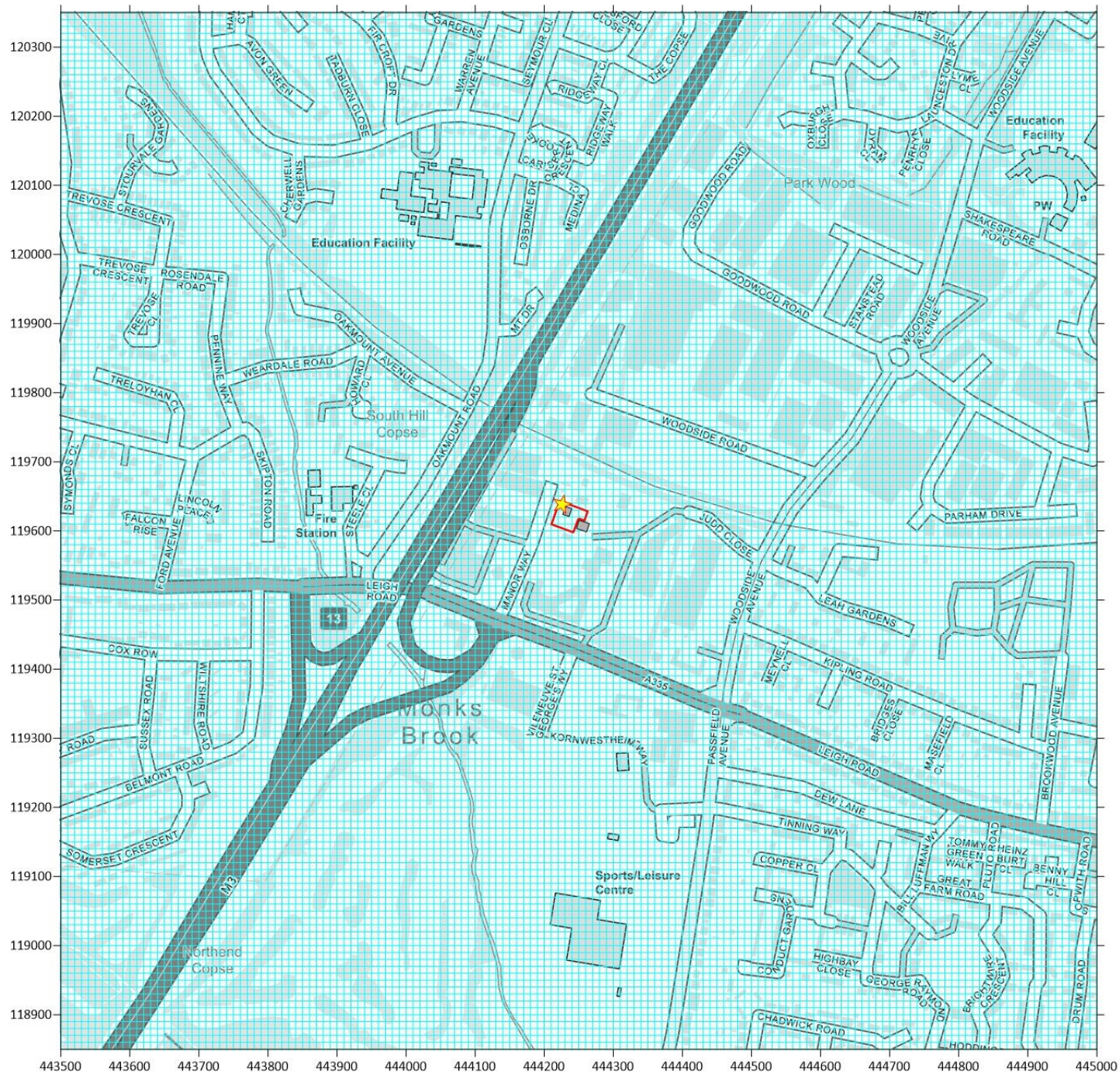
BE2763

Client

Morgan Sindall Construction & Infrastructure Ltd

Contains Ordnance Survey Data
© Crown Copyright and Database Act 2019





Legend

-  Site Boundary
-  Stack
-  Output Grid
-  Building

Title

Figure 4 - ADMS-5 Inputs

Project

Air Quality Assessment
Leigh Road, Eastleigh

Project Reference

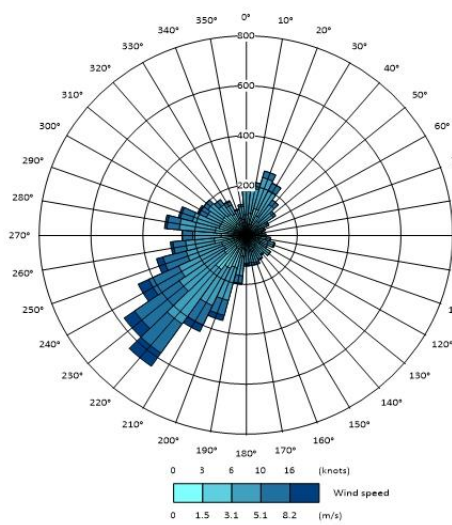
BE2763

Client

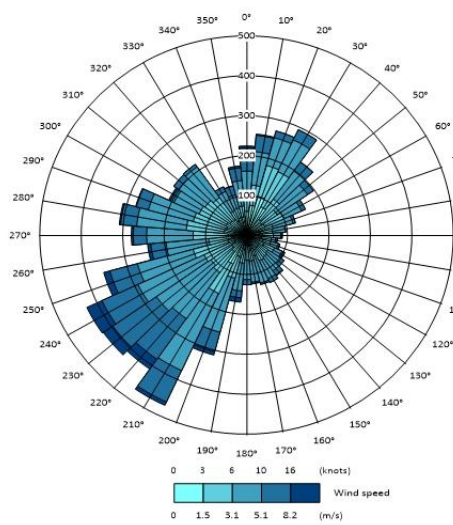
Morgan Sindall Construction &
Infrastructure Ltd

Contains Ordnance Survey Data
© Crown Copyright and Database Act 2019

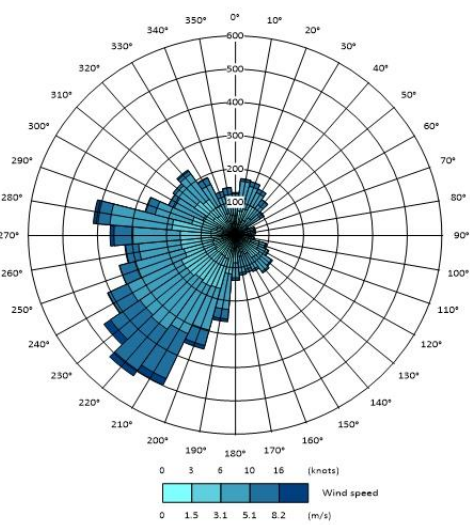




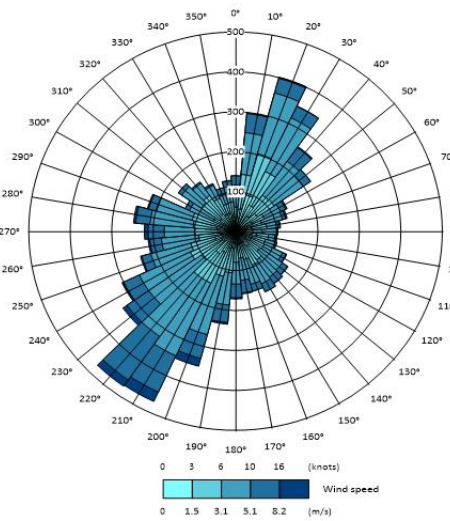
2015 Meteorological Data



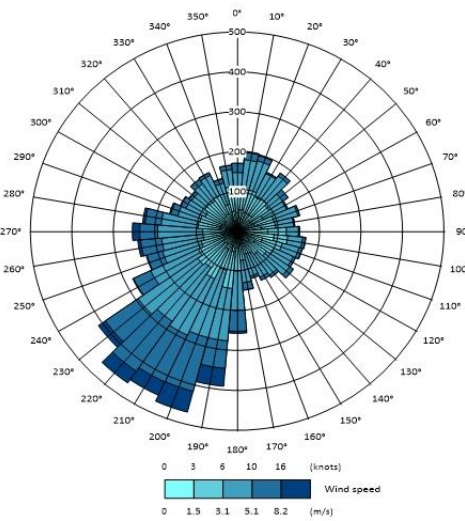
2016 Meteorological Data



2017 Meteorological Data



2018 Meteorological Data



2019 Meteorological Data

Legend

Title
Figure 5 - Wind Roses of 2015 to
2019 Southampton Airport
Meteorological Data

Project
Air Quality Assessment
Leigh Road, Eastleigh

Project Reference
BE2763

Client
Morgan Sindall Construction &
Infrastructure Ltd

