

APPENDIX 11.5 NOISE MODEL PARAMETERS

An acoustic model of the Site, Proposed Development and nearby environs was created in DataKusttik GmbH CadnaA MR2 (64-bit). The following approach was adopted in generating the noise model:

- The model was set to apply the standards and calculation methods outlined in ISO 9613-2¹;
- Open-source LIDAR Composite DTM (Digital Terrain Model) raster elevation data at 2m spatial resolution topographic data is incorporated into the model for the existing application site and surrounding area, extending to encompass the nearest receptors;
- Building facades are set to be acoustically reflective and the model includes second order reflections from solid structures;
- Building eaves height for the Proposed Development are set to be 10m;
- Existing buildings were incorporated based on Ordnance Survey (OS) mapping and aerial photography. Dwellings are set to 6m above local ground height;
- Globally, ground absorption was set to G=1 (acoustically absorbent ground) with proposed areas of hardstanding (e.g. roads and service yards) included separately with ground absorption set to G=0 (acoustically reflective ground);
- The operational service yard noise sources have been modelled and calibrated using M-EC's in-house database of measured noise sources, and typical manufacturers data as described in **Appendix 11.6 – Operation Assessment**;
- HGVs arriving and departing the Proposed Development have been incorporated as line sources. The line source extends from the Site boundary around the proposed perimeter roads outlined in masterplan reference: 5166-CA-00-00-DR-A-05001 P8. The location of the line sources are based on a single inbound, a single outbound and a manoeuvre within the service yard and are based on M-EC's history of similar projects. The HGV line source height is set at 0.5m above local ground;
- Line sources have also been included, along the same extents, for HGV trailer chillers. The chiller line source height is set at 3.5m above local ground;
- HGV arrivals, manoeuvres, air brakes, loading and unloading, cab idling, and departures have been entered as point sources with a height of 0.5m above local ground for the proposed HGV docking bays;
- Similar point sources have also been added for HGV parking spaces (but without the loading and unloading elements); and
- Idling trailer chillers have been added as point sources with a height of 3.5m above local ground. These point sources have been added for the docking bays and proposed HGV parking spaces.

¹ ISO 9613-2 'Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation.'