

Pilkington Glass

Pilkington Glass operates a large float glass manufacturing plant at its Greengate works at Sutton Heath Road, St Helens. The aim of this project was to provide a sustainable energy source for the manufacturing facility using a fluidised bed fuelled by approximately 150,000 tonnes per annum (tpa) of refuse derived fuel (RDF) from non-hazardous municipal waste and commercial and industrial waste sources. The Airshed was appointed by the consultant engineers for the project, SWECO, to conduct the air quality and environmental noise impact assessments for the planning application.

The main process emissions to atmosphere were to be the products of combustion and residual gases released from a 60m high multi-flue stack. The main process building were up to 36m high and housed the combustion plant, heat exchange boilers and steam turbines with 15MWe electrical generation capacity and the remainder being exported to the national grid.

The AQIA considered the potential adverse air quality impacts from the proposed new process and the likely concentration of residual pollutants at sensitive receptors, including impacts on residential areas, short-term exposure on roads and footpaths within the industrial/commercial zone, and exposure at designated ecological sites. The air quality impacts from the process were assessed against Environmental Assessment Levels (EAL) derived from European Directives, UK Air Quality Standards (AQS) and Environment Agency (EA) Guidance. Baseline air quality conditions were obtained from UK Government estimates and took account of extensive local measurements conducted by St Helens Council as part of their statutory duty for local air quality management. The assessment included a detailed model sensitivity analysis for meteorological data, surface roughness, terrain and stack height. The predictions were obtained using ADMS 5. Additional predictions were obtained using AERMOD, the regulatory dispersion model from the US Environmental Protection Agency (USEPA) to increase confidence in the model predictions.

Sources of noise were to include the cooling plant, noise breakout through walls and roofs; noise breakout through doors; residual noise from the top of the stack; and noise from yard activities. The nearest residential receptors to the process were 380m. A baseline noise survey was conducted at four locations around the proposed installation. Detailed measurements were recorded at these sites to provide a continuous record of noise levels over a seven day period along with detailed weather measurements. Impacts were assessed in accordance with the methods set out in BS 4142:2014 Methods for rating and assessing industrial and commercial sound. The assessment also considered impacts in terms of World Health Organisation (WHO) sleep disturbance criteria. Noise from the installation was predicted using a computer based mathematical model based on ISO 9613, implemented by SoundPlan 7.4, and this was used to inform the mitigation plan for the works.

The assessments were reviewed by the local authority and recommended for approval, subject to a range of planning conditions.

