![awnconsulting logo]

Case Study

AWN Consulting's team of scientists and engineers has provided a range of consultancy services to a large scale semi-conductor manufacturing facility in Ireland from 2000 to present.

Acoustic Services

AWN's acoustic team have developed a site noise model for the semi-conductor manufacturing facility.

The first step was an exhaustive survey of significant noise sources on site, with measurements of the *sound power level* for each item of equipment (pumps, air handling units, extract manifolds etc.).
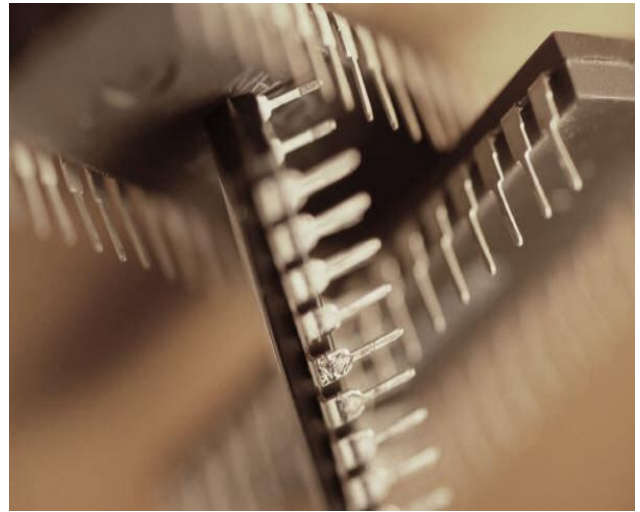
A computer-based model was prepared, taking into account the site topography of the area, the presence of obstacles such as buildings, boundary walls, earth berms etc. Noise level contours were developed and displayed on mapping.

The identification and noise emission ranking of significant noise sources on site provided a useful tool and simplifies on-going noise management.

AWN Consulting also prepares monthly noise monitoring analysis reports and the annual attended daytime and night-time noise monitoring surveys and assessments as required by the Intel IPPC Licence. AWN Consulting has also contributed to several IPPC licence applications for the facility.

Air Dispersion Model

AWN Consulting undertook detailed air dispersion modelling of the facility using the USEPA approved AERMOD air dispersion model in conjunction with the meteorological pre-processor AERMET PRO and the terrain pre-processor AERMAP. Five years of meteorological data from Casement Aerodrome was input into the model in addition to all on-site and off-site structures to build up a 3-D image of the facility. Modelling was carried out at for a range of scenarios for a suite of pollutants (HF/TF, NOX, VOCs, NH3, SO2) in order to ensure compliance with the appropriate ambient air quality standards whilst ensuring maximum flexibility for the facility. All modelling scenarios were converted into the appropriate percentile and compared with the recognized standard for each pollutant such as EU ambient air quality standards (1999/30/EC, 2008/50/EC), where relevant.

Semi-conductor Manufacturing Facility
IPPC & Seveso Consultancy Services

Seveso Consultancy Services

AWN provides consultancy services to the facility in relation to Seveso II compliance. A HAZard IDentification (HAZID) study was completed in 2003 and updated in 2008. This involved consequence modelling of 19 major accident scenarios including flammable gas leak and jet fire/flash fire/VCE, liquefied flammable gas release and BLEVE/Fireball, toxic and asphyxiant gas release and dispersion, chemical warehouse fire and dispersion of toxic combustion products, gas cylinder/trailer rocketing.

AWN are currently completing works to comply with Upper Tier status including HAZID update, consequence modelling and QRA, MAPP and SMS review, preparation of Safety Report and Internal Emergency Plan, contribution fo External Emergency Plan.

AWN liaise with the HSA on an on-going basis and provide assistance at HSA Audits. Hazard identification and quantitative risk assessments are completed for developments on site and in support of planning applications.

Other services provided include classification of material in waste acid and solvent tanks in accordance with Dangerous Preparations Directive Criteria.