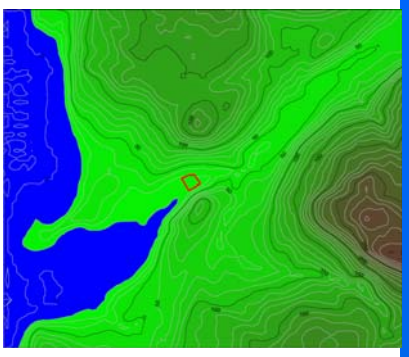
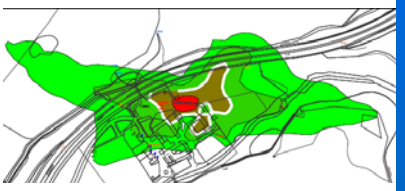
Ardgowan Distillery

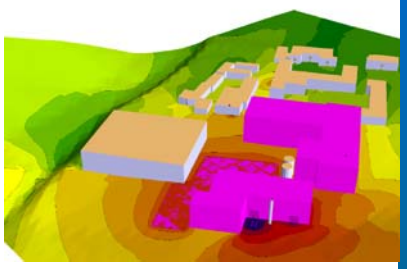
Blyth & Blyth Consulting Engineers were appointed by the Ardgowan Distillery to undertake the design for a proposed new distillery within the estate policies, at Inverkip, with a production capacity of 1.5 million litres of pure alcohol per year. The proposed site was located in a rural area, where the nearest residential properties was >100m to the south-west. Inverclyde Council advised that odour and environmental noise impact assessments were required for the proposal. Blyth & Blyth appointed Airshed to conduct these assessments.



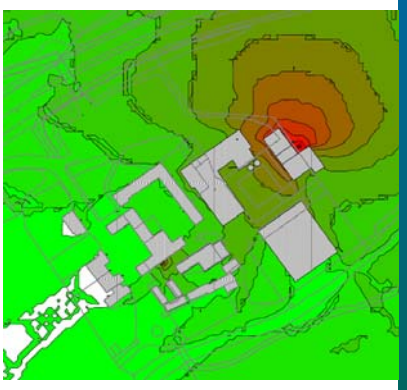
A baseline sound survey was conducted over seven days at two locations along with detailed weather measurements to obtain typical existing ambient and background sound exposure during the daytime (07:00 – 23:00) and at night (23:00 – 07:00). Noise impacts were predicted using a computer based noise prediction model (SoundPlan 7.4) in accordance with ISO 9613. Sound sources were based on measurements at similar operations elsewhere and procurement specifications for the fixed plant. The impacts were assessed in accordance with the Scottish Government's Technical Advice Note on Planning and Noise, BS 4142:2014 and World Health Organisation (WHO) sleep disturbance criteria. The proposed mitigation measures included design layout, procurement specifications for fixed plant and minimum acoustic insulation requirements for the new process buildings.



All operations were to be conducted inside the process buildings to prevent or minimise the release of odours from the process. The only significant emission source with potential for the release of odour was from the ventilation duct above the mash tun when vapours are released to atmosphere. These odours are usually less offensive and an odour benchmark of 6 OU_E/m^3 1 hour 98%ile is normally used to protect residential amenity.



A dispersion model (ADMS 5.1) was used to predict odour around the proposed installation using 5 years of historical meteorological data. A model sensitivity test was conducted to consider the effects on dispersion of meteorological variability, surface roughness and topography. The worst case dispersion conditions were used to predict odour impacts.



The worst case impact assessment indicated that odour was predicted to be $\leq$3 OU_E/m^3 1 hour 98%ile at all sensitive receptors. Odour impacts were predicted to be insignificant at the nearest residential receptors, subject to the satisfactory implementation of the proposed mitigation measures.

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