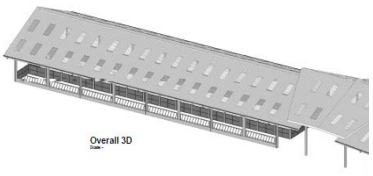
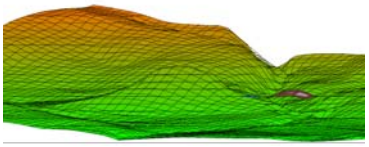
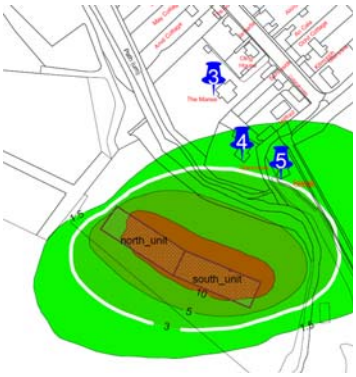
Odour from Cattle







Simon Howie, the Scottish Butcher of Millhouse Farm, Dunning, appointted The Airshed to conduct an odour impact assessment for a proposed high-welfare beef cattle unit on the outskirts of Dunning, Perthshire. The local environmental health officials of Perth and Kinross Council (PKC) raised concerns about odour affecting residents of existing dwellings on the south-west of Dunning, some of which were <100m from the nearest unit.

The assessment was based on the assumption that up to 180 small native breed cattle would be housed from late September until early May each year. The proposed cattle sheds were pen-sided with natural ventilation and would use deep-bedded barley straw on a non-slatted floor, with no slurry storage.

The assessment for the project was conducted in accordance with a methodology agreed with PKC, who had engaged the services of Ricardo Energy & Environment to help them review the application.

Odour from the proposed facility was predicted using ADMS (an atmospheric dispersion model) and 5 years of hourly sequential meteorological data from Strathallan Airfield, ~10km from the proposed site. PKC's consultant suggested the use of an odour emission factor based on mature milking cows. This emission factor was considered to be unrepresentative of the proposed operations at Millhouse Farm as the emission rate is calculated per cow. Airshed selected an alternative published emission factor which allowed the lower weight of the small breed cattle to be taken into account. A sensitivity analysis was conducted to determine the effects of meteorological variability, and the effects of terrain, seasonal factors, surface roughness and emission rates on predicted odour.

The assessment predicted that the worst case odour from the proposed units would be 3 OU_E/m^3 1 hour 98%ile at sensitive receptors, which is of minor adverse significance. The assessment concluded that impacts would be acceptable, provided the unit was only used to house small native breeds with low stocking densities and high animal welfare standards, where the young beef cattle are kept on deep straw beds and where the top layer of straw is replenished regularly to minimise the release of odour. The odour impact assessment was reviewed by PKC and approved, subject to conditions which included a detailed odour management plan for the site.

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