

# Odour from Surface Coating

Scotia Homes applied to Angus Council for planning permission to demolish industrial buildings and construct new flats in Forfar. The local Environmental Health Department raised concerns that odour from paint spraying operations at an adjacent factory could affect residential amenity and requested an odour impact assessment to determine if the site was suitable for housing.

The adjacent industrial plant has spray booths fitted with fabric backed filters and discharged through two 7m high stacks which terminated below the ridge level of the adjacent process buildings.

The Airshed was commissioned by the developer to advise on measures to mitigate potential odour impacts. The assessment assumed maximum paint application rates in consultation with the process operator. Odour impacts were assessed against draft odour standards published by SEPA.

A widely recognised mathematical model - ADMS 4.0.3 - was used to predict dispersion, taking account of source conditions, meteorology and local buildings. A more complex modelling approach using Computational Fluid Dynamics (CFD) was used to help confirm the optimum stack height. The results from both dispersion models gave good agreement.

Based on indicative emission rates, most existing receptors around the process would suffer minor to moderate loss of amenity. The emissions from the existing stacks were poorly dispersed. The existing 7m high stacks did not meet best practice guidelines, which recommend that such emissions should be discharged to at least 3m above the roof ridge.

The results from the dispersion modelling indicated that the new flats closest to the paint booths would be likely to be affected by odour. Some existing receptors are also potentially exposed to odour so that mitigation at the process would provide wider community benefits.

Increasing the height of the stacks serving the paint booths to 14m would be likely to protect the amenity of residents of the proposed development as well as reduce the odour impacts to all existing residential receptors.

Click on the 7m and 14m stack images for animated flows.

