

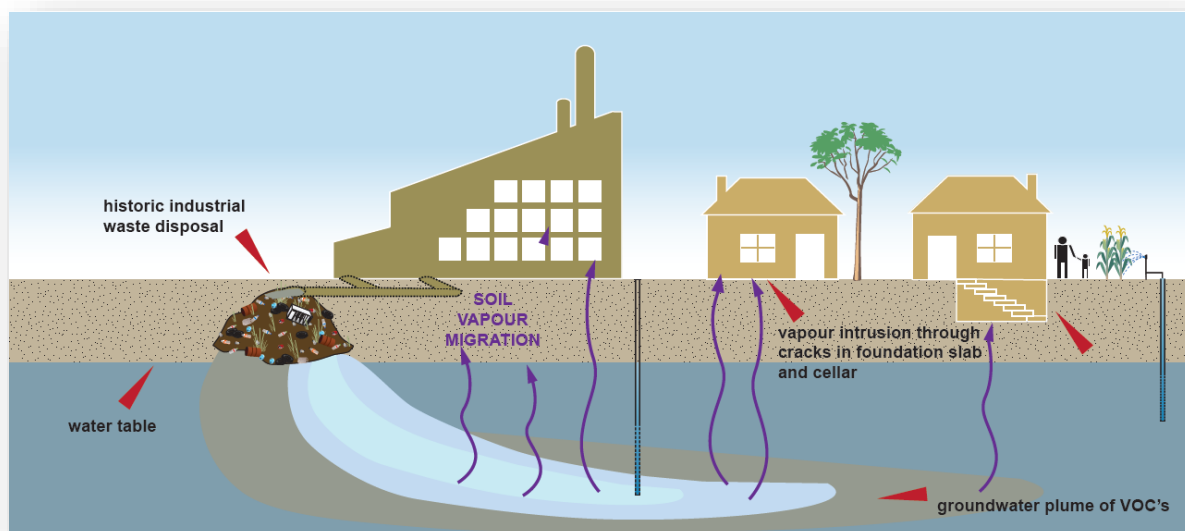
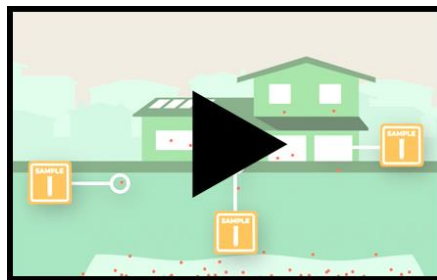
Reducing vapour intrusion into your home

Issued December 2020

EPA 1118/20: This information sheet is prepared for residents living in areas where there is potential for vapour intrusion caused by site contamination. It provides simple measures to increase ventilation in your home in an attempt to reduce the concentration of vapours in the indoor air.

What is vapour intrusion

When volatile chemicals are identified in groundwater or soil beneath the surface, there is potential for these chemicals to migrate upwards through the soil and accumulate in indoor air. This is called 'vapour intrusion'. The video and diagram explain how vapour intrusion occurs in all industrialised nations worldwide, and some of the chemicals typically found in SA.



Certain chemicals easily and readily evaporate, and are termed 'volatile'. Volatile organic compounds (VOCs) are very common and have been used historically, both domestically and in industry. Volatile chemicals are commonly found in petrol, some glues and paints, some cleaning products and some degreasers.

While many volatile chemicals present an odour, others do not and may not be noticed by occupants. If these chemicals are present inside buildings at high enough concentrations and over extended periods of time, they can potentially result in adverse health effects.

What can I do about it?

If your home is potentially affected by vapour intrusion, you can take a number of simple and practical precautions that will:

- dilute or disperse vapour by increasing the flow of fresh air from outside to inside or below a house
- prevent vapour from rising from below the ground into the house.

Open windows and doors

Opening external windows, doors and vents can increase the air flow inside the house, reducing the potential build-up of vapours.

Keeping windows slightly open when and where possible may also be effective.

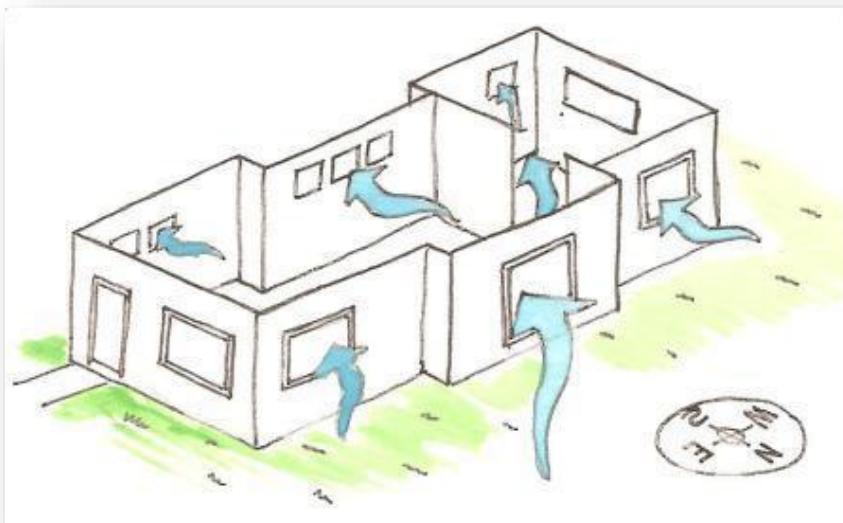
Reducing the time that a house is fully closed can prevent vapour build-up, as can 'airing it out' when you come home if it has been shut up.

If vapour intrusion is likely to be an issue, the most important rooms to consider ventilating are those that people spend most time in, such as bedrooms and living rooms.

Promote fresh air by opening windows or doors at opposite ends of the house to allow the natural airflow to replace indoor air with fresh air from outside.

Under-floor ventilation

If your home has a crawlspace (the area between the floorboards and the ground), increasing ventilation through this space can reduce the amount of vapour entering the indoor air. This can be done by clearing vegetation and blockages away from ventilation points outside your home.





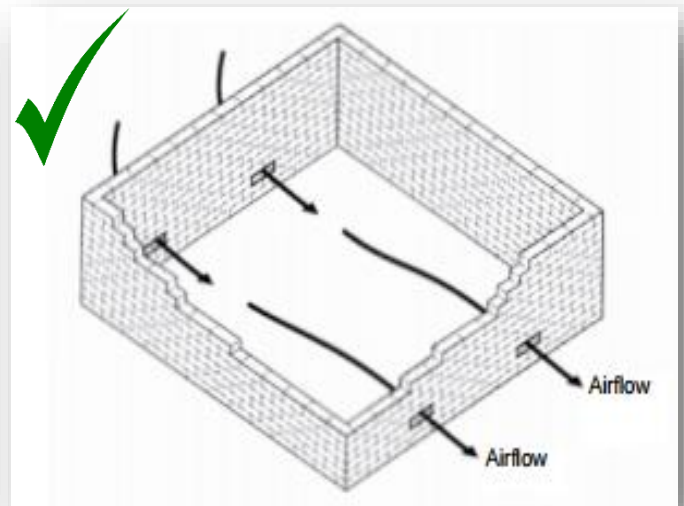
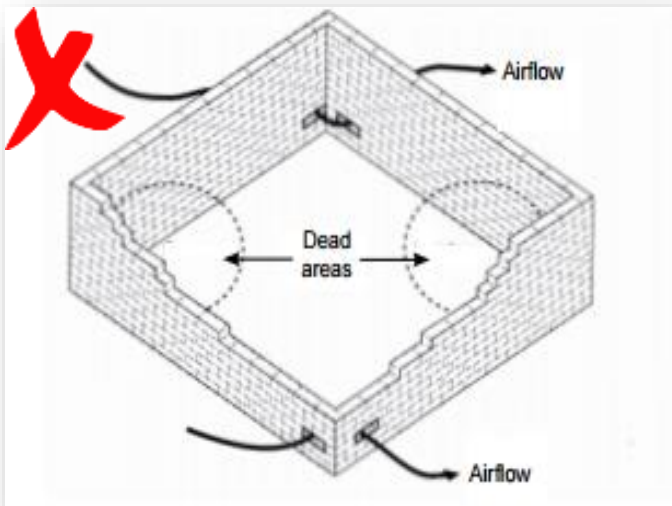
Clear vents allows maximum airflow



Replace older vents with newer vents

Older style vents (often made of clay) have smaller holes and tend to not ventilate as effectively as modern steel or plastic vents. Replacing older vents with newer vents may improve ventilation within a crawlspace¹.

Installing additional vents in the crawlspace to increase airflow beneath a home may also reduce the concentrations of vapour accumulating inside the home².



Ensure that the vent arrangement is effective for the prevailing wind conditions

Keeping your floor in good condition

If you have timber floorboards, seal the gaps with a high-quality flexible (silicon) sealant available from your hardware store to ensure there are no holes or spaces for soil vapours to enter from below. This is also effective for managing the energy efficiency of your home.

If your home is on a concrete slab, inspect underneath the carpet and ensure any cracks are sealed, if feasible.

If it is not possible to access areas of your floor where cracks or gaps may exist, another solution might be to reconsider how different areas of the house are used. For example, rearranging rooms where the most time is spent will minimise the use of space where ventilation may be lowest, or where the flooring gaps allow air to be drawn in from below.

You should also consider sealing the gaps where pipes enter your home such as in the bathroom, laundry and kitchen.

¹ Reducing Radon – Improving natural under floor ventilation – Public Health England (June 2015)

² Radon Solution in Homes – Improving underfloor ventilation – BRE (November 2012)

Tips for the safe use of exhaust fans

Some household appliances, such as kitchen exhaust fans, range hoods and bathroom fans, can create a suction effect by extracting air upwards and inadvertently drawing up vapours from below the house.

If you have any of these appliances installed in your home, it is recommended that external windows and doors are kept open while you have them turned on. By keeping windows or doors open, air is mostly drawn in from the outside rather than from beneath the house.

Disclaimer

Information contained in this fact sheet is intended as a good repair guide for home owners, and provides simple and practical advice for reducing vapours from site contamination inside the home. Where vapour intrusion is severe then further measures may be necessary to reduce indoor air concentrations. If you live in an area where site contamination has been identified and are concerned about potential vapour intrusion into your home please contact the EPA.

Further information

For further information on site contamination please contact:

Site Contamination Branch
Environment Protection Authority

GPO Box 2607
Adelaide SA 5001
Telephone: (08) 8204 2004
Freecall (country): 1800 729 175
Website: <https://www.epa.sa.gov.au/>
Email: EPASiteContam@sa.gov.au

For health related information on site contamination please contact:

Scientific Services Branch,
Public Health Services, SA Health

11 Hindmarsh Square
Adelaide SA 5000
Telephone: (08) 8226 7100
Website: <https://www.sahealth.sa.gov.au/>
Email: public.health@health.sa.gov.au
