Skills
WORKSHOP
Managing noise in ductwork systems

New tricks
The pros and cons of mature-age apprenticeships

Snakes on a drain!
Ants in the plant, possums in the plenum, and other HVAC animal crackers
Australia is a place of amazing wildlife. And whether for warmth, shelter, water, food or other reasons, that wildlife is often found in HVAC&R equipment and systems around the country.

According to the Victorian Department of Environment, Land, Water and Planning (DELWP), any wildlife that lives in hollows or holes may consider HVAC systems a suitable alternative. That includes possums, reptiles, native rodents and insects – as well as vermin such as rats, mice, pigeons and even feral animals.

With winter now biting in the southern states, many technicians servicing the residential market will be coming across heating systems that have not been turned on for months. Some will have become home to a range of animals and pests.

I’ve also come across two possum skeletons and over 30 mummified rats in suburban areas.
Yarns from the field

Hose or Snake?
The patterns of some snakes look very similar to common HVAC&R components such as braided nylon sleeving—it can be hard to see them until they start moving.

“We were replacing a domestic ducted system, and as we were opening the condenser up to disconnect the pipes and cables, we discovered the snake wrapped around the condenser,” says Tom Conlan of Temperature Control CC on NSW’s Central Coast.

“We figured out the snake had pretty much nested in the condensing unit, and had probably done so for some time as there were plenty of dead animal carcasses and the smell was awful.”

“Snakes are misunderstood by many…they play a pivotal role within the environment,” McKenzie says. “Usually it is the snakes hiding within air conditioning units or heaters because mice had ruined the boards, and found a possum living in a heater duct,” Williams says.

“I’ve also come across two possum skeletons and over 30 mummified rats in suburban areas including Glen Waverley, Upper Beaconsfield, Blackburn and Wheelers Hill.”

In many cases, pests will chew their way into the plastic-sleeved ductwork of residential heating systems. But they will also take advantage of existing holes and poor or deteriorating connections.

Equally, in warmer parts of the nation, very different kinds of fauna find their way into HVAC&R equipment and will be discovered throughout the year.

We invited fridges from around the country to tell us about their close encounters with all creatures great and small.
Bird control needs to be put in place, even low-voltage he says. “Columbidae can overrun a site in no time if left alone,” necessary to stop the acid corroding the system.”

The biggest pest problems on the Downs is created animals, possums and rats, McEwan says one of the Eight-legged creatures also cause problems on the Downs. Spiders love to create a home in and around HVAC&R systems. And excrement clean-up is by far the work harder, placing pressure on components and ultimately causing catastrophic failure.

Eight-legged creatures also cause problems on the Downs. Spiders love to create a home in and around HVAC&R systems. And excrement clean-up is by far the biggest pest problems on the Downs is created by Columbidae – otherwise known as pigeons.

“Columbidae can overrun a site in no time if left alone,” he says. “Bird control needs to be put in place, even low-voltage bird control systems. And excrement clean-up is necessary to stop the acid corroding the system.”

THE WHIRLWIND RAT

Rats and mice are commonly found in and around HVAC&R systems, but one particularly large rodent met an unfortunate death.

“I once found a big rat that had been caught in the barrel fan of an under-ceiling split system,” says Allen Gregory.

“The poor thing must have been running on it having a great time until it started! It latched onto the inside of the fan and I think the centrifugal force and shock killed it. It wouldn’t let go and threw the balance of the fan out so much that the unit was nearly shaking itself free from the ceiling.

“When I found him, he was latched onto the inside of the barrel fan with all four claws. Most of its insides had exited its rear end.

“It wasn’t the start to the day I had hoped for. Nor him I imagine!”

REMOVING THE STENCH

Occupants often aren’t aware of pests or animals within an HVAC&R system until performance is affected or unusual smells start wafting out.

“Oh, you probably most clients’ biggest worry with comfort cooling systems, as this affects their level of comfort and could also impact their day-to-day trade,” says McEwan.

In his experience, once an odour has entered a consumer’s air conditioning system, it’s hard to convince them it will ever dissipate.

“It needs the source of the odour – usually a dead animal – to be removed. But it might also require the ducting to be replaced if it is the flexible type. In some cases, the local council or EPA might need to be involved due to the bacteria that can be present at different stages of decomposition.”

As experts in HVAC&R hygiene, corrosion and indoor air quality solutions, Aeris Environmental and its national network of partners are often called on to treat odours and lingering microbial issues.

According to Scott Gregson, national business development manager for Aeris Environmental, it doesn’t need to be the result of a deceased animal or infestation to cause a problem.

“If you have an animal that defecates or urinates in the unit or duct, or is trapped and dies there, the remains start to decay,” he says. “And you would very quickly have microbial and bacterial issues to deal with.

“These can find their way into the airstream or drain network of plant and equipment, resulting in a much more complex remediation process aside from just the removal of the animal.”

If a technician encounters the remnants of an animal or infestation within a HVAC&R system, Gregson says they should quickly identify the areas within the system that are contaminated. Appropriate remediation and cleaning specific to the type of contamination should then be carried out.

“A specialist HVAC hygiene maintenance and remediation company should be consulted,” he says.

There are a number of processes that can return the equipment and system to good working order. These include HEPA vacuuming of surfaces; sanitisation of all surfaces; drying of all surfaces; treatment of affected surfaces; and assessment of surfaces and air sampling in the surrounding areas to ensure effective remediation has occurred.

“But prevention is better than the cure,” says Gregson.

ACCESS ALL AREAS

So, how do you stop animals getting in?

The bad news is that nature typically finds a way. However, it’s still worth taking preventative measures.

Animal-resistant guards and mesh are options. You can also seal wall penetrations to prevent ingress, or use surface spray. We’ve even heard that the common moth ball is an effective deterrent for some species.

According to Gregson, access can be prevented with vermin grates and mesh on external entries of ductwork or openings in plantrooms. “Also, technicians should ensure that all seals on doors and access hatches are tight, and that access points are correctly functioning, can be closed and remain closed especially when systems are under pressure.”

If the system is in the roof space, possums can be a risk. But again, there are steps you can take.

“All tree branches that lead to the roof should be pruned, with a gap of at least 1.5m,” says a DELWP spokesperson. “Possums can jump a long way down but can’t jump far across.

“Brushitalize possums and other wildlife can also gain access to the roof space through loose roof tiles or roofing iron, broken eaves and holes in timber and brickwork, so these should be repaired.”

If a possum is suspected to be living in the roof, watch where the possum emerged from and block off these access points. A one-way flap that allows the possum to leave but not return is a simple and humane way of restricting access.

A fact sheet about management methods for brushitalize possums living in roofs and gardens is available from www.wildlife.vic.gov.au

WE’VE GOT A LIVE ONE!

Finding animal damage is one thing, but what should you do if the creature is still alive and inside the system?

In Victoria, all wildlife is protected under the Wildlife Act 1975. Similar laws also exist in other states and territories.

This law states that it is illegal to destroy protected wildlife without authorisation from the Department of Environment, Land, Water and Planning (DELWP). Severe penalties apply.

If a technician encounters wildlife of any sort onsite, the DELWP says the animal should be removed and released on the same property.

FERAL PERIL

It’s not just native fauna that can find their way into HVAC&R systems. Feral animals are also a potential problem, as this experience in the Darling Downs demonstrates.

“My most disturbing find, to date, would be when I visited a client west of the Downs who said his refrigeration unit on the roof was making a loud ticking noise,” says Brendan McEwan of Alpine Refrigeration.

“When I got there, I found a large black feral cat had curled up against the condenser overnight for warmth. When the coolroom had called for cooling, the compressor would have fired up along with the fan and the cat had no chance of making it out.”

“Every turn of the blade made its mark and eventually pushed the feline back up against the condenser, continuing to skin it. I had to remove the belts and adjust the motor back to normal.”

Columbidae infestation of plantroom.

Source: Brendon McEwan, Alpine Refrigeration.
Cover Feature

"Licensed wildlife controllers can assist with the removal of certain wildlife species, including reptiles and brushtail possums."

Different states have regulations around the removal of fauna. For example, Common brushtail possums living in buildings in Victoria can only be trapped if they are to be released on the same property, within 50m of the capture site, or taken to a registered veterinarian for euthanasia.

"Possums may only be trapped using traps that will not cause injury, and must be released on the same property," says the Department spokesperson. "Humane traps are available from many local councils."

If injured wildlife is found, a licenced wildlife shelter operator or foster carer should be contacted.

Last year, the Victorian government launched the Help for Injured Wildlife online tool to make it easier to find help for injured wildlife anywhere in Victoria.

The new tool provides information about wildlife rehabilitators, rescue organisations and veterinarians in the local area who can help and care for the animal, such as a possum, koala or snake.


YARNS FROM THE FIELD

DERELICT IN THE DUCT

Brushtail possums have developed a reputation for finding their way into homes, particularly as the weather cools and fewer suitable trees are available to them.

"I’d gone to the site as the customer had reported poor airflow in their ducted heating system," says Jason Williams of Perfect Temperature Heating and Cooling.

"Upon inspection, I found a massive hole where something had chewed through the plastic sleeved duct. I quoted the fix and returned a couple of days later, but upon completion we still had no airflow to the bedroom."

"I sent my guy under and he could see a sag in the 150mm duct. Assuming something was in there, he blocked it from entering the rest of the system, while I dropped the boot. But not before a sneaky photo!"

"Once the boot dropped, the possum high-tailed it out of there.”

Carpet python found during chiller start-up after shutdown period. Source: Brendan McEwan, Alpine Refrigeration.