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How to Recognise Drainage Problems

Finding drainage problems when they're smaller and easier to fix can save you thousands of dollars and plenty of headaches down the line.



Clogged gutters don't just prevent water from flowing off your home, they can also cause structural damage.

You don't have to be a geophysicist to know that puddles under the floor or a lake on the front lawn are signs of drainage problems.

But many drainage problems aren't so obvious. Here's how the pros read some of the more subtle signs of bad drainage, and why you'll save big bucks if you tackle these problems now instead of later.

Sign #1: Gushing gutters

A mini waterfall over the edge of your gutter means dead leaves and debris are blocking the flow. But you don't need a live gusher to tell you you've got problems: Vertical streaks of dirt on the outside of gutters, mud spattered on the cladding or foundation walls, or paint peeling off the house in vertical strips are other sure signs. If you don't take action,

overflowing gutters can rot cladding, ruin paint jobs, and cause significant structural damage.

Best case: Leaves are clogging the downspout, and you just need to clear them out or hire a pro to do it (about \$75).

Worst case: Gutters are undersized or improperly installed and need to be replaced or reinstalled. That could run a few thousand dollars, but it's still cheaper than new cladding or repairing and underpinning a structural failure in your foundations.

Sign #2: Down pipes that dump

Each 25mm (inch) of rain that falls on 107sqm (1,000 square feet) of a roof produces more than 2271 Litres (600 gallons) of runoff—enough to fill 10 bathtubs to the brim. Dumping that much water too close to the foundation can send it right into the under floor space or basement, where it can ruin furnishings, flooring, and all the stuff you swore you'd put up off the ground one day.

Best case: You can add down pipe extensions (about \$15 for a 3 metre length) to carry the water away from the house.

Worst case: Too-short down pipes or not connected to stormwater systems continually dump buckets of water around your foundation. The water seeps deep into the soil and puts pressure on your foundation walls, eventually cracking them. A foundation contractor comes out and gives you an estimate of \$30,000 to excavate around your foundation and fix everything. You begin to cry, dumping even more buckets of water into the soil around your foundation.

Sign #3: Water stains in the basement

Depending on where a stain shows up, you can tell if the problem is caused by surface water, which can be easy to deal with, or water travelling underground, a potentially bigger headache. Your local Independent Property Inspector can advise you on this.

Best case: You see stains high on your foundation wall, meaning that water is coming from an overflowing gutter, or that surface runoff backed up against your house because the soil around your foundation doesn't slope adequately (150mm or 6 inches for every 3 meters or 10 feet is best).

Worst case: The stain extends in a line around the basement. If that's the case, you may be looking at a high-water mark caused by a fluctuating water table. Or, your basement floor lies below the level of municipal storm drains that back up during heavy rains. In either case, an interior drain system and sump pump (around \$3,000) will pump any seepage out of our basement, keeping your old bowling trophies dry.

Sign #4: Cracks in the foundation

Foundations often have small cracks that appear as houses settle over time. Most are harmless, but bigger cracks bear watching. Keep an eagle eye on cracks larger than 3mm (1/8-inch) wide by marking the ends with an erasable pencil line. Measure the width and jot it down. If you notice the cracks are growing, you've got potential problems.

Best case: A crack appears where the builders finished installing one load of concrete and began pouring the next. Such cracks usually don't penetrate all the way through. And even if they do, as long as they're stable you can patch them with hydraulic cement or polyurethane caulk for less than \$20.

Worst case: Cracks are continuing to widen, indicating that a drainage problem may be ruining the foundation. Call a structural engineer (not a contractor or waterproofing expert) to diagnose the problem, assess the risk, and suggest a repair. Expect to shell out \$300 upwards for a structural engineer's diagnosis.

Sign #5: Flaking and deposits on walls

If you see areas of white or gray crust on the basement walls, that's efflorescence—mineral deposits left behind by evaporating water. Or the wall may be flaking off in bigger patches, a condition called spalling.

Best case: The efflorescence points to a place where moisture is condensing. It doesn't cause structural problems, but you may want to check out your gutters, down pipes, and the grading of the soils around your foundation. Scrape off and clean down the wall if the crust if looks ugly.

Worst case: The wall is spalling because water is getting inside the masonry. Spalling can be just superficial, but if it's deeper than 12mm (½-inch) and widespread, it may be a sign of improper drainage that threatens the structural integrity of your foundation.

Sign #6: Mildew or Mold in the roof space or attic

Sure, the roof space or attic might be a strange place to look for drainage problems, but mold and mildew on the underside of the roof can be a tipoff to serious trouble at the ground level.

Best case: Bathroom fans are spewing hot air directly into the roof space, where it condenses on the cold underside of the roof and causes the mold or mildew. Venting roof and or the fan through an outside wall or the roof vent (about \$300) solves the problem.

Worst case: Moisture from the basement or under floor crawl space is rising through the house and condensing on the underside of the roof. In that case, you've got to find and stop the source of the dampness under the house. If you don't act, the mold can permeate and grow freely throughout the living areas of your house you'll end up replacing carpets, curtains, clothing, furniture and possibly some of the building materials, a job that runs to thousands of dollars for the typical house.

Sign #7: Migrating mulch

When soil doesn't drain properly, rain runs off in sheets, carving gully's in the landscape, dumping silt on pathways, and carrying piles of mulch or wood chips where they don't belong.

Best case: For a few hundred dollars, you can hire a landscaper to create a simple berm (a soil mound) or swale (a wide, shallow ditch) to redirect the water flow away from the house.

Worst case: Your concrete patio cracks and paving stones start popping up because the gravel or sand base material has washed away. After redirecting the water, you'll need to excavate the patio and start again.

To find out more and get your home inspected call your local independent property inspector on **1800 17 88 22** or email info@ipi.net.au