



DAMAGE DOWN BELOW

Early leak detection is the best way to prevent costly elevator repairs

Leaking water in elevator pits is a common problem in all buildings, but it shouldn't be taken lightly—not when the smallest drip can develop into something serious. Hefty repair costs aside, removing an essential service like an elevator in a multi-residential building comes with its own set of unwanted challenges.

The best advice? Stop water leakage before it swells out of control. Here to provide all the answers is James Cooper, Associate with RJC Engineers.

HOW COMMON IS WATER LEAKAGE IN BUILDING ELEVATOR PITS?

It's very common. Elevator pits are notorious for leakage. Typically, leakage occurs in the

early spring when the snow begins to melt, and the building and surrounding area are subject to heavy rainfalls. It also happens in the fall when groundwater levels tend to rise. That said, leakage can happen at any time of the year. Groundwater or run-off will always find the lowest place in your building to rest, which is typically the elevator pit.

WHAT KIND OF DAMAGE CAN RESULT FROM WATER LEAKAGE?

Once water gets into an elevator pit, it can begin to corrode a lot of sensitive equipment like tracks, weights, counterbalances, springs, and electrical components. If you have hydraulic elevators, water will also harm the pistons and contaminate the hydraulic fluids. All of that can be very expensive to deal with if left unchecked.

ARE THERE SAFETY RISKS BUILDING OWNERS SHOULD BE AWARE OF?

Yes, there are safety issues at play if the elevator components are corroding. That's why the Technical Standards Safety Authority (TSSA) doesn't like water in elevator pits, and why they'll compel the property manager or owner to get someone in to fix it.

CAN THE BUILDING STAFF DO ANYTHING TO RESOLVE A LEAKAGE ISSUE?

Other than staying on top of it, there's nothing a property manager or maintenance professional can do to address water once it's in a pit because it involves very sensitive work in a restricted space. An elevator technician must be consulted to shut down the elevator and coordinate the investigation.

THEN WHAT HAPPENS?

After the technician completes the investigation, a professional solution needs to be determined by an engineer. The best time for engineers to get in and do their inspection is when the elevator technician is already there on a scheduled visit—that way the client won't get charged for an extra one. Once in the pit, the engineer will do a thorough review to identify the problems and develop solutions that can then be designed and tendered to experienced contractors who will execute the work.

WHAT MIGHT A SOLUTION LOOK LIKE?

Typically, solutions involve removing components of the elevator system, like plates and protective covers, to reveal as much of the bare foundation wall as possible. Next comes what's called crack injection with a polyurethane product to fill any cracks in the actual elevator foundation walls to stop the major paths of water from getting into the pit. From there, crews will



Water stains on the foundation wall are an indication that leakage has occurred and an inspection should be conducted to assess where it's coming from and how to prevent it. Any signs of water in an elevator pit have the potential for trouble.

come in with a crystalline waterproofing system and coat the entire interior surface of the elevator pit, including the floor slab, to prevent water from getting in.

Also, there are lots of bolt holes and anchor spots that can't be removed because doing so would mean removing the entire elevator. This requires working around those by using sealants or other urethane-compatible products to try to trap that water. Another approach is to drain the water out of the elevator pit by drilling holes into the wall and connecting those with piping directly to either an adjacent sump pit or a drain that might already be in the elevator pit.

ANY FINAL ADVICE?

Essentially, it all comes down to being proactive versus reactive. If there's any concern about elevator pit water leakage, get an engineer in to conduct a review, write a report, and provide recommendations right away. Waiting is never good. If there is evidence of water, it should be dealt with as quickly as possible before it gets worse. And left unchecked, it will get worse. ■

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