

*Redefining the Finite*

# The Benefits of Preventive Maintenance

by SEAN McCALLUM



The eventual replacement of your building's roof is inevitable... Take a deep breath... Good. The current model for our universe is one of ever increasing entropy, which essentially means that we will always need a roof over our heads, and that things will continue to break down over time. The first step is admitting that we are powerless in the face of this irrefutable fact. But with that being said, simply because the life of a roofing system happens to be finite, it doesn't necessarily preclude that a roof's life need be short-lived.

We all know that the cost of a roofing system's initial installation can be a massive financial undertaking, an expenditure that can take years of planning, number crunching, and resource re-allocation just to procure the funding for. But far too often, once that beautiful, budget-annihilating, brand-spanking-new roof is installed, we don't seem to give it another thought - the old adage of out of sight, out of mind never ringing so true - until that roof begins to leak. What most building managers don't realize, however, is that the service life of a roof can be extended by 10, 20, even up to 30 years; a pivotal putting-off of that massive expenditure which in turn allows for funding to be disbursed to other, more pressing needs; with something as simple and easy as a well-managed preventive maintenance program.

The best example I can give relates to the way in which we maintain our cars. Now, admittedly, I know very little about the

intricacies of the internal combustion engine. In fact, you could pretty well go on record as saying that I'm completely useless when it comes to all things automotive. One of my greatest fears, therefore, is having my car break down on the side of the road, which in turn would result in my having to reveal just how utterly incompetent I am to whomever happens to be sitting in the passenger seat as I pretend to check gauges and fluid levels in a futile attempt to save face before ultimately calling CAA and having them tow me to the nearest Volkswagen dealer.

In order to prevent this humiliating admittance-of-lacking-masculinity from ever occurring, I do everything in my power to ensure my engine is running well. I have my oil changed every 5,000 km; I let the guys at the Lube Joint overcharge me for the imported oil filter because I don't know any better; and if the seventeen year old kid with the funky piercing informs me that I should think about replacing my timing belt and air filter, I tell him to go right ahead and thank him for his time. And you know what? My friends are still under the impression that I know the difference between a crankshaft and a cam, and I haven't had my car into the mechanic in more than two years.

I'm paying a little bit to take care of little problems before they can become bigger problems, and this investment ensures that my car remains in decent, serviceable condition for longer than it otherwise would.

My dad, on the other hand, is a veritable amateur grease monkey, insisting on doing almost all of his car's minor mechanical work himself. And I won't go on record as saying that he's cheap, but let's just say that preventive maintenance isn't exactly at the top of his priority list. It really should have come as no surprise, then, when the engine on the family car seized up on one of our Griswold-esque summer vacations and we ended up spending three days in a place called Birdsnest, Virginia, waiting for our engine parts to arrive as we passed the time by playing with the mechanic's pet raccoon.

The point is: all of this unnecessary cost, inconvenience, and traumatization could have been avoided had my dad simply adhered to a well-managed preventive maintenance program. And in essence, the same truths exist for your roof.

Given the risks of premature roof failure, the decision to proactively maintain your roof should be an easy one. Dick



## Redefining the Finite continued

Fricklas of RSI (Roofing/Siding/Insulation) Magazine has gone on record as saying: "There is no chance for long-term performance unless the roof is inspected and maintained." The economic impact of extending the life of your roof can be enormous, and the prevailing mindset in the roofing industry posits that preventive maintenance is the single greatest cost savings opportunity in roofing. Having to replace a \$100,000 roofing system every 30 years as opposed to every 15 years, the direct result of implementing a preventive maintenance program, can offer a real cost savings of anywhere from \$40,000 to \$70,000 over the course of those 30 years. Where there is only so much money to spend; particularly when that money is publicly funded; it is imperative that that money be spent wisely. There is perhaps no wiser investment than the prolonging of your roofing system's service life that preventive maintenance provides.

The fundamental aim of preventive maintenance is to identify and solve minor, inexpensive problems before they become widespread, costly, and immensely difficult-to-solve problems. The Canadian Roofing Contractors Association (CRCA) recommends that a thorough roof system maintenance inspection take place at least twice per year, ideally in the late spring, and then again in the late fall. A preventive maintenance inspection usually consists of a thorough visual inspection by either a pro-



fessional roofing contractor or a well-trained member of the building's personnel (the well-trained personnel should have a solid understanding of both the proper roofing safety procedures, and the intricacies of the roofing system itself). It is a good idea to keep a recorded file detailing the scope of work conducted during each inspection, and it is recommended that

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roof conditions be photographed for use in accurate, year-by-year comparison.

Routine maintenance inspections are particularly necessary for school roofs. When I look back on my grade school days, I fondly remember recess time as little more than an exercise in determining who could throw the most stuff onto that forbidden elevation where tennis balls went to die. Bottles, sticks, rocks, crabapples, you name it: if we could chuck it, there was a pretty good chance it was ending up on the roof. It's what kids do. Unfortunately for building managers, however, foreign objects and debris on the roof present a major problem for the integrity of the roofing system. Smaller objects can puncture the waterproofing membrane when stepped upon, and larger debris can work their way into the membrane during the hotter months.



Debris clogging the roof drains presents an even graver problem. Leaves, stones, pine needles, and Fruit Roll-up wrappers often clog the drains lining school roofs, presenting a major hazard, particularly during and shortly after periods of heavy rainfall when thousands of pounds of unnecessary deadweight, in the form of stagnant water, can be resting above the heads of both staff and students alike. It is recommended that drains be inspected and cleared of all debris at least once a month in order to avoid a catastrophic roof system failure.

Other problem areas that should be routinely inspected during a roof's preventive maintenance inspection include: any edge detailing for signs of wind uplift; any roof penetrations (HVAC equipment, skylights, etc...) for deteriorating sealants; and the termination of wall flashings for secure attachment and adequate counterflashing cover. Any routine repairs should be

carried out immediately, and if there exists any problems that cannot be resolved at the time of inspection, arrangements for professional support should be made as soon as possible in order to avoid any further roof system deterioration.

It warrants mentioning that access to the roof should be limited to those who absolutely need to be up there, and the urge to step outside for an inconspicuous rooftop cigarette does not constitute one of those aforementioned needs (cigarette butts have been known to burn holes through the membrane). Finally, a thorough inspection of the general work area should be conducted after any work is completed on the roof (HVAC repair, painting, window washing, etc...).

In the past, for the most part, we dealt with our roofing systems in terms of reactive action; which essentially meant that when the roof leaked, we called a roofer. Unfortunately, however, by the time the roofer has been notified within the framework of this archaic system, the problem has often become too big and too expensive to effectively repair. This is an extremely costly way of conducting business, and the cost is one that school boards and other publicly funded ventures no longer have the luxury of undertaking. The only conditions under which we can, in good con-



science, continue to operate are those that see our financial investments going further and lasting longer than they previously have. Only with a well-planned, proactive system of preventive roof maintenance is it possible to extend the life of your existing roof system; an investment which will in turn allow for more fiscally responsible investments to be made in the future. ❖

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