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Spring Inspection Timely Roof Maintenance Is Good for the Environment

BY WILLIAM MYERS

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They say April showers bring May flowers, but they may also bring leaks if your roof hasn't been properly maintained and inspected in the past year.

With the mild weather finally here, now is the time to get someone up on the roof to look for winter damage, and identify any minor issues before they become major problems.

"A roof inspection is the single most important activity that an environmentally conscious building manager can do," said David Hawn, president of RCI Inc., an association of consultants, architects, and engineers who specialize in the design of roofing. "Maintenance is the key to realizing the full life cycle of a roofing system – and that's good for the environment. By detecting minor defects and repairing them early, it is possible to avert major problems in the long run."

A premature roof failure places a heavy burden on the environment, considering the energy costs for manufacturing new roof materials and the waste associated with the removal and disposal of spent ones.

Many facilities managers are qualified to perform roof inspections. A basic survey for obvious damage is better than no examination at all. Damage often occurs near flashings, wherever the roof meets a wall, or a drain or other penetration.

"If you don't get the full life out of a roof then you are doing damage to the environment," said Hawn, adding that a professional, registered roof consultant will not recommend replacing a roof that hasn't reached the end of its service life.

"That's where experience comes in. A roof consultant can tell when a roof is still good and when it should be replaced. He will help the building owner eke out a few more years of service life whenever possible, which is especially appreciated in difficult economic times."

RCI recommends that roofs be inspected twice a year, just after and before winter. The advantage of inspecting a roof in the spring is that maintenance and repair work can be conveniently scheduled over the summer.

Hawn said it's important for inspectors and managers to obtain accurate technical information about the reliability and performance of building products and their suitability for a particular application. According to Walter Rossiter, technical services director at RCI, the objective of a roof maintenance program is to extend the expected useful life (EUL) of a roof system. The elements comprising a successful program are periodic inspections, routine maintenance and repair, and correct application of quality roofing products.

Many maintenance programs have been developed to monitor the conditions of roofing systems and schedule repairs. Regardless of the age of the roof, regular inspection and maintenance are vital to ensure that a roof reaches or exceeds its expected useful life. As a roof approaches the end of its life cycle, maintenance decisions become especially critical.

A moderately experienced facility manager can check the roof membrane, flashings and drains for obvious problems. If defects are spotted then it is time to call in an independent roof consultant for an objective evaluation of roof condition. In this manner, serious problems can be averted without concern that unnecessary roof work is recommended.

Common Defects

Membrane defects vary according to roof type. For a three- or four-ply builtup roofing system, be on the lookout for exposed felts, wind scour, blisters, asphalt migration (down slope), ply slippage (down slope), exposed embedded metal, inadequately filled pitch pockets, splits or tears.

Common defects in a two-ply modified bitumen system include open seams, inadequate bleedout, exposed bleedout, blisters, fish mouths, wrinkles, exposed reinforcing scrim, loss of granules, inadequately filled pitch pockets, punctures, tears or splits.

Single-ply roofs can have problems with open-lap seams, short-lap seams, fish mouths, wrinkles, inadequately filled pitch pockets, punctures, tears or splits. A standing-seam metal roof can have open seams at standing seams, missing or backed-out fasteners, buckling of pans, scratches, dents or corrosion.

Flashings are frequently found to be a problem source. In general, the assessment of flashings is similar to the assessment of the membrane insofar as the type and extent of defects. Two important concerns not associated with membranes are the vertical attachment and the counterflashing.

When counterflashings appear damaged or flashings do not appear to be watertight and performing well then plans should be made to get them repaired.

The slope of the roof and drainage are other important factors. Roof drainage and roof deck slope are two distinctly different parameters. As routine maintenance goes, not much can be done about the slope but something can be done about the drainage.

An obviously clogged drain is a very common problem in the spring and is easily noticed and fixed by the building maintenance staff. Just remove the debris from the around the roof drain and then from the roof. An independent roof consultant can also assess the proper functioning of the drainage system by noting the roof slope to the drains and general roof slope; and the size or amount of drains, gutters and scuppers.

Drainage refers to the ability of the system to carry water away from the roof and the building. The building code usually dictates the minimum level of drainage required for a roof. Conventional design calls for at least four drains for larger roofs; a minimum of two drains for roofs under 10,000 square feet, and a maximum spacing of 75 feet in any direction for drains.

Other factors that are important to note in a roof maintenance program are the relative costs of repairs compared to the cost of replacing the roof; the leak history of the building; the durability and toughness of existing membrane; the type of attachment of the membrane; the susceptibility to roof traffic; and the importance factor, meaning what is the use of the building under the roof area.

A typical roof maintenance program will score these various factors on a relative scale of 1 to 10 based on the knowledge and experience of the roof consultant. The conditions of roofing sections can then be ranked, prioritized for maintenance or repair.

RCI's Hawn said, most modern roof membranes are rugged enough to withstand the forces associated with winter weather. Aside from actual structural damage to the building from excessive loads, snow and ice on the roof is not usually the cause of damage to the roofing membrane. However, severe winter weather does contribute to the wear and tear on the roof.

"Water tends to remain on the roof longer when there is snow and ice on the roof because the water does not drain. So a small defect that may not leak during a typical rain event could leak when snow and ice is on the roof," said Hawn.

No matter the severity of the winter, roof inspections should be conducted in spring. If the building owner is having a problem and does not have an in-house expert, then the best move is to call a roof consultant, who can provide an objective and independent assessment," says Hawn.

"A registered roof consultant is not going to recommend roof repairs or roof replacements that are not needed." — **William Myers** is director of Communications for RCI Inc., an international association of professional consultants, architects, and engineers who specialize in the specification and design of roofing, waterproofing, and exterior wall systems. Founded in 1983 and based in Raleigh, NC, RCI, Inc. regularly hosts educational programs designed to demystify and explain the application of building envelope technologies.