

## Roof Inspections – Not Just Another Storey

By Gayle Mitcham



People and organizations often neglect to inspect their roofs once, let alone regularly, throughout the year. Signs of roof system failure and repairs that are put off can result in increased damage to the building envelope and interior finishes. Not only that, but what about the building occupants? If structural damage and repairs cause interruptions, can people still use the building? What if the structural integrity fails? The safety of your occupants may depend on proper and regular roof inspections.

Roof system failure can result in classes being cancelled or shifted to more accommodating rooms, labs being shut down, or students being forced out into the cold or into hotels, when emergency

repairs are required. These scenarios can easily be avoided with proper roof care and regular roof inspections.

### Your rooftop takes the brunt of nature's forces

- Rainwater gets underneath roofing materials, which can cause the structure to rot. This mildew can spread to areas inside the building (including walls, insulation, and electrical systems).
- Wind can lift roofing materials, allowing water or debris to get underneath.
- The heat from the sun gradually deteriorates roofing materials.
- Snow and ice can refreeze and build dams that block proper drainage of

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### Serving Our Members

*We understand that the increasingly broad and complex scope of university operations can present you and your colleagues with many, and sometimes unusual, risk and claim-related questions. It's most likely, however, that the CURIE staff, through its dealings with the other 58 CURIE subscribers, have encountered issues like yours. If not, we're highly experienced in finding answers through our network of contacts.*

*Don't hesitate to call or e-mail us if you have a question. We are here to help you manage your risks and protect your university – and we are always looking for ways to serve you, our valued members, better.*

*The safety of your occupants may depend on proper and regular roof inspections.*

the roofing system, allowing a backup of water to seep into the interior of the building.

- Condensation can build up in poorly ventilated attics, which can decay sheathing and rafters, and perhaps destroy the roof structure.
- Moss, which holds a significant amount of moisture, can grow on roofing materials.
- Trees overhanging the building can scratch, pull, and puncture roofing materials. Leaves on a rooftop retain moisture and can encourage rot.<sup>1</sup>

While subjected to this constant bombardment, your roof may begin showing significant signs of wear.

Catching these signs early should avoid more serious problems down the road.

The goal of every roof inspection is threefold: 1) to determine if the roof system is performing according to its intended function; 2) to identify signs of weakness, deterioration or hazards; and 3) to identify any needed repairs.

The process of performing roof inspections should be undertaken throughout the year. Steps may include:

- A visual inspection, which should occur when roofs are free of snow and debris, to get a baseline.
- A review of documentation from past inspections.
- An exterior inspection, which looks for continuity of roof covering and any deterioration of materials and their overall performance.
- An interior inspection of ceilings and walls for signs of water penetration and structural distress.

- Performing any non-destructive investigations – such as with infrared thermography – if moisture infiltration is suspected.

- Reporting potential system failures and initiating maintenance and repair.

- During winter, monitoring snow loading on roofs and removing excess snow while ensuring personal safety and minimizing damage to the roof structure.

Ultimately, all storeys come to a roof, the condition of which requires a thorough inspection.

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<sup>1</sup>[www.nrca.net](http://www.nrca.net)



# The Inspector

## *Fire Safety in the Faculty Office*

By Philip Chandler

*You may be on top of fire safety when it comes to student facilities, but fire does not discriminate when it comes to the hallowed inner sanctum of campus faculty and staff.*

State Fire Instructor Gerald Paris shares one simple truth about fire with every new training class: "Fire does not discriminate!" This mantra applies to every aspect of firefighting, fire prevention efforts included. We in the college arena make a grave error if we think that fires on the campus are only a problem in certain occupancies and occur only at certain times of the year. Yes, we are on high alert when students are on campus, and we are right to be extra vigilant when it comes to residential facilities. But fire does not discriminate; it may rear its ugly head at any time and in any building on the campus. Such is the case with a recent fire in a faculty office occurring during winter break. Who would have thought?

For those of us that pound a beat, so to speak, and routinely inspect faculty and staff offices, a fire in any one of these spaces is not really so farfetched after all. A faculty office may not share the same hazard level as a raucous frat house, or for that matter, a poorly supervised organic chemistry lab, but there are nonetheless a unique set of risk factors present here as well.

Let's face it: conducting fire safety inspections is not rocket science. For me, I start each inspection by asking one key question: Where is the next fire going to be? More often than not, my answer depends on two basic variables: fuel and source of ignition. I assume that each occupancy routinely has both. However, when I find an over

abundance of either one or the other, or certainly both of them together, bells and whistles go off. Faculty offices frequently throw my internal alarm into overdrive.

There are those offices – I'm sure you know where they are on your campus – that challenge one's imagination when it comes to just how much stuff one individual can cram into a finite space. Books, journals, newspapers, student assignments from three years ago, you name it, they are all there. Needless to say, such a combustible fire load is always a problem; in the office it becomes a dynamic load. At every moment, there is the very real threat of avalanche. No joke! Even a relatively benign desk lamp or a surge protector, when buried under a foot of manila envelopes, can become an unwitting source of ignition.

But the faculty offices of today are rarely benign when it comes to sources of ignition. It is not uncommon to find, even in the smallest of offices, a refrigerator, a microwave, and the ubiquitous coffeemaker. Add to the mix a computer, a printer, a shredder, an electric pencil sharpener, and a wide range of chargers, some of them not even connected to devices. Of course all of them are plugged into overload-protect power strips; and we are lucky, all the power strips are plugged directly into wall receptacles. Yeah, right! We are just as likely to find all these modern conveniences plugged into extension cords purchased at the local dollar

store, of course with their grounding prongs broken off. Sound familiar?

But it gets worse. Especially here in the colder climes, more and more portable electric heaters are showing up. This is especially the case where schools have initiated all kinds of energy saving programs, particularly during winter intercession, resulting in lower thermostat settings. Perhaps faculty members are embarrassed that they are making their own contribution to global warming, or maybe their feet are cold; regardless, the location of choice for portable heaters is deeply recessed under desks, further concealed by all of those books and file boxes that didn't fit on the credenza.

And then there are our all-time favourites: open flames. We go to great extremes to keep these out of student residential quarters, yet we rarely say a word when we find candles and incense burning in our campus offices.

I have found them unattended on several occasions, often in close proximity to combustible materials. We obviously still have plenty of work to do in getting the most fundamental fire safety messages out there.

All right, so there are faculty offices on our campuses that are ready to burn – they provide the perfect combination of copious combustible materials and potential sources of ignition. What are we to do to prevent the fire, next time?

One would think that recourse to the thought expressed in the well-known adage, "A word to the wise is sufficient," might work in the academic environment. One would hope that in dealing with faculty, drawing their attention to the fire hazards in their office would be sufficient in gaining willing cooperation. Perhaps it will be adequate to explain to them that even a small wastebasket fire, even one in an

Unfortunately, we may not always get the support of school administrators either. They are not eager to tangle with professors over room decor. Of course, nothing will get their attention more quickly than the clean-up expenses of a fire. But we absolutely must exhaust every remedy to avoid that scenario. For those of us with code enforcement authority, the citation may be the best way to gain the needed traction.

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adjoining room, will produce enough smoke and water damage to ruin all the contents of their offices. One would think! Unfortunately this is not always the case.

There are those recalcitrant professors out there that are surprisingly not amenable to our gentle prodding. This should, perhaps, come as no surprise. Keep in mind, in the academic world it is considered meritorious to question all orthodoxies and inherited perceptions. This is a good thing most of the time, really; it just doesn't work when it comes to fire safety. We in the fire service do believe that in the last two centuries, we have learned a few painful lessons on how to prevent fires. Yet not everyone behind the ivy-covered walls is prepared to accept our knowledge as valid. I hope it's not our clip-on polyester ties that diminish our credibility!

**Consider the following sections of the International Fire Code:**

**F305.1**

Clearance between ignition sources... and combustible materials shall be maintained in an approved manner.

**F308.3.3**

Open flames such as from candles shall not be located on or near decorative material or similar combustible material.

**F315.1**

Storage of combustible materials in buildings shall be orderly...

**F605.1**

Identified electrical hazards shall be abated...

**F605.5**

Extension cords and flexible cords shall not be a substitute for permanent wiring...

**F605.4.2**

Relocateable power taps shall be directly connected to a permanently installed receptacle.

**F605.10.1**

Portable, electric space heaters shall be plugged directly into an approved receptacle.

**F605.10.3**

Portable, electric space heaters shall not be plugged into an extension cord.

**F605.10.4**

Portable, electric space heaters shall not be operated within 3 feet of any combustible materials...

By no means is the above list of possible code citations exhaustive. Oftentimes we may also find real instances of compromised paths of egress and inadequate aisle space in campus offices, not to mention issues of accessibility. After all, most colleges pride themselves on being inclusionary; why should a student in a wheelchair be deprived of the experience of a one-on-one chat with the professor in his book-lined study?

Let's face it, assuring a complete fire-safe environment in academia is no easy task. We have to use every means at our disposal to accomplish our mission. We should try friendly persuasion, reasoned discourse, but in the end it may be the citation book that gets action. Sometimes, especially in dealing with the faculty office we must adopt a new posture: *No more Mr. Nice Guy!*

*Phillip Chandler is a long-time firefighter and a fulltime government fire marshal working extensively in the college environment – from large public university centres to small private colleges. His primary responsibilities include code enforcement and education.*

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## STATEMENT OF INCOME AND EXPENSES

For the first quarter ended September 30, 2011

|   | 2011              | 2010              |
|---|-------------------|-------------------|
| Written Premium   | \$ 24,050,733     | \$ 25,817,797     |
| Earned Premium  | 18,038,050        | 19,366,385        |
| Less Reinsurance Costs                                      | 885,133           | 912,370           |
| Net Earned Premium  | 17,152,917        | 18,454,015        |
| Net Incurred Claims   | 13,692,329        | 13,205,934        |
| <i>Net Loss Ratio</i>                                       | 79.83%            | 71.56%            |
| <b>Underwriting Profit (Loss) Before Operating Expenses</b> | <b>3,460,588</b>  | <b>5,248,081</b>  |
| Operating Expenses  | 2,747,527         | 2,588,557         |
| <i>Net Operating Expense Ratio</i>                          | 16.02%            | 14.03%            |
| <i>Combined Ratio</i>                                       | 95.84%            | 85.59%            |
| <b>Underwriting Profit (Loss)</b>                           | <b>713,061</b>    | <b>2,659,524</b>  |
| Income from Investment                                      | 902,039           | 863,324           |
| Other Income  | 453,850           | 197,314           |
| *Other Comprehensive Income (Loss)                          | (1,504,144)       | 2,455,778         |
| <b>NET PROFIT (LOSS)</b>                                    | <b>564,806</b>    | <b>6,175,940</b>  |
| <b><i>Subscribers Equity (surplus)</i></b>                  | <b>43,852,771</b> | <b>38,208,201</b> |

\*Other Comprehensive income (Loss) represents unrealized gains (losses) on available-for-sale securities.

# CURIE Risk Management Newsletter



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[www.curie.org](http://www.curie.org)

## EVENTS to Mark in your Calendar

### **9th Annual Campus Fire Safety, Security and Risk Management Professional Development Conference and Expo**

Monday - Tuesday, March 5 - 6, 2012  
Columbus, Ohio  
[www.campusfiresafety.com/conference](http://www.campusfiresafety.com/conference)

### **RIMS 2012 Annual Conference & Exhibition**

Sunday - Wednesday, April 15 - 18, 2012  
Philadelphia Convention Center, Philadelphia, PA  
[www.rims.org/RIMS12](http://www.rims.org/RIMS12)

### **2012 Ontario Higher Education Risk Management Symposium**

Monday - Wednesday, May 28 - 30, 2012  
Donald Gordon Centre, Queen's University, Kingston, ON

### **2012 CURIE University and College Risk Management Meeting**

Saturday - Sunday, September 8 - 9, 2012  
Saskatoon, Saskatchewan