



AFTER THE FALL: LEARNING THE LESSONS OF ELLIOT LAKE

BY MICHAEL MASTROMATTEO

PEO is taking a leading role in helping improve the regulatory framework surrounding the building design industry in Ontario.





Although only a small portion of the Algo Centre Mall rooftop parking lot collapsed and fell, it will have an enormous impact on future building safety in Ontario. PEO hopes that by partnering with architects, technicians, building inspectors, the Ontario government and other stakeholders, the regulatory framework around building inspection and safety can be greatly improved.

Shortly after the Commission of Inquiry was established on July 19, 2012, the regulator sought and obtained official standing. In addition, the regulatory compliance department opened investigations to determine if work by PEO licence holders related to the Algo Centre Mall was performed competently and in compliance with the regulations under the *Professional Engineers Act*, as well as other applicable statutes, regulations, standards, codes, bylaws and rules.

Chris Roney, P.Eng., BDS, FEC, a member of PEO council, headed up the regulator's Elliot Lake Advisory Committee (ELAC), which was struck to lead PEO's response to the disaster. As a third-generation structural engineer and building design specialist, Roney has been living and breathing the Elliot Lake experience for the last three years.

"Once the [Bélanger] inquiry began, PEO probed the events that led up to the collapse," Roney says. "Based on what we learned from the events surrounding Elliot Lake, we developed a series of recommendations that are intended to address those matters that relate to professional engineering."

NO REGIME IN PLACE

As well, in November 2012, PEO issued the professional practice bulletin *Structural Engineering Assessments of Existing Buildings*, which was a first step in addressing one of the most glaring deficiencies brought to light by the Algo Centre Mall collapse—namely, that there was no common understanding of what a structural engineering assessment of an existing building should comprise. There was also no require-

Retired justice Paul Bélanger emphasized "human failings" as a major contributing factor in the June 23, 2012 partial collapse of the rooftop parking deck of the Algo Centre Mall in Elliot Lake.

In citing human failing as central to the combination of events leading to the preventable deaths of two Elliot Lake residents, in his report of the Commission of Inquiry Bélanger noted the roles played in the tragedy by a number of those charged with protecting public safety, professional engineers among them.

"Many of those whose calling or occupation touched the [Algo] mall displayed failings," Bélanger writes, "its designers and builders, its owners, some architects and engineers, as well as the municipal and provincial officials charged with the duty of protecting the public."

And, while less than ideal practices by some engineers were noted as contributing to the Elliot Lake disaster, all those involved in building design, construction and regulation—including property owners, architects, technologists, municipal building and elected officials, and even the ministries of labour and housing—have been called on during the course of the inquiry, and with the release of its final report, to examine their policies, procedures and ways of doing business in reconciling what occurred.

PEO LOOKS TO TIGHTEN REGULATORY FRAMEWORK

Just weeks prior to the events of June 23, a Sault Ste. Marie-based engineer, whose licence had been suspended as the result of an earlier, unrelated matter, had inspected the mall and declared it "structurally sound." That now-former engineer has since been charged by the Ontario Provincial Police on counts of criminal negligence causing death and negligence causing injury.

But rather than hand wringing and attempting to distance itself from the disaster, PEO has looked at it as an avenue for suggesting ways to tighten up the regulatory framework in the building design and construction area.

In the days immediately following the collapse, PEO's regulatory compliance department, anticipating a commission of inquiry, began reviewing documents and prepared an initial overview report on the regulation of engineering in Ontario.

ment that such assessments be done routinely on any buildings, a situation outside PEO's ability to correct, but one on which it made recommendations for change in its written submission to the commission.

In fact, PEO's submission offered 11 recommendations, almost all of which made their way into the commissioner's recommendations in his final report. Among the PEO recommendations endorsed by the commissioner are that:

- PEO develop a new performance standard for structural inspections of existing buildings, based on its existing practice bulletin;
- structural inspection of certain existing buildings be required periodically and the resulting structural adequacy report be prepared and sealed by professional engineers who are certified by PEO as structural engineering specialists; and
- PEO release additional information about practitioners disciplined for professional misconduct.

Based on its submission, PEO was also invited to participate in an expert roundtable on November 20, 2013 on the role of professionals and other building consultants. Roney represented PEO at the roundtable, at which commission counsel probed aspects of participants' submissions and for which PEO provided answers in writing to questions related to practitioners' scope of expertise and continuing professional development; structural review of existing buildings; practitioners' supervision of the work of others; transparency of licence suspensions and revocations; practitioners' duty to report; and the possible roles and definitions of a prime consultant and provincial engineer.

Another problem identified from inquiry witness testimony was a failure to synthesize information contained in the scores of building reports made on the Algo Centre Mall over the years. Roney points out that the mall had been inspected numerous times between 1989 and 2012, but the information about identified conditions and remedial actions was seldom passed along to the

city's building department, subsequent owners, or other professionals undertaking work at the mall.

Accordingly, the commissioner's final report calls for mandatory filing of every structural adequacy report in a publicly accessible registry. Where a report shows a building does not meet an also recommended provincial minimum structural maintenance standard, the commissioner recommends the report be required to set out the needed repairs and be provided by the structural engineer to the municipality's chief building official.

Since the release of Commissioner Bélanger's final report, PEO has already approached the Ontario attorney general about the need for regulatory changes to support implementation of the inquiry recommendations aimed at PEO.

WORKING COLLECTIVELY TOWARD CHANGE

"Most of the proposed changes require creating standards that need legislative authority to be enforced," Roney says. "We [PEO] can't do it without the concurrence of government. We're optimistic that through this tragedy, there will be motivation on the government's part to put through some changes to improve engineering regulation in the interest of the public."

At PEO's November 5 Queen's Park reception (see p. 8), Ontario Attorney General Madeleine Meilleur said the province is committed to working with PEO to implement recommendations contained in the Bélanger report.

"While I recognize that both the province and PEO will need to take time to carefully consider this report, I am eager to begin working with your organization as well as our municipal and agency partners to plan our next steps," Meilleur said. "As quickly as possible, I want to see the lessons learned from this report applied in professional practices so that all building structures are safe."

Echoing these sentiments, Roney notes: "The lessons learned from the events at Elliot Lake touch on many more callings and professions than just engineering. PEO is acting responsibly in the public interest, but there are other organizations involved here."

In fact, PEO has already taken preliminary steps toward working collaboratively with some of these other bodies.

On November 19, for example, members of PEO's Professional Standards Committee subcommittees on structural design and structural assessment and PEO staff from the policy and professional affairs unit held a working session with staff of the Ministry of Municipal Affairs and Housing (MMAH), which administers the Ontario Building Code, to share insights on some of the areas that would need to be considered in trying to meet the spirit and intent of the inquiry recommendations. The MMAH and PEO representatives agreed to update each other on their respective plans to work through implementation of the recommendations and, where possible, work together and cross appoint members to panels and committees to harmonize outcomes.

It was also recognized that once the government appoints the recommended advisory panel to make recommendations on classes of buildings and timeframes for periodic inspections to the new minimum structural maintenance standard, the input of professional engineers with expertise in this area will be required. PEO will also likely be invited to participate, subject to its review of the government's mandate for the panel to ensure there are no regulatory conflicts.

OAA SUPPORTS PRIME CONSULTANT

As for how others involved in building design, construction and regulation are addressing the inquiry recommendations, Bill Birdsell, B.Arch. president, Ontario Association of Architects (OAA), says the recommendation relating to a prime consultant is most relevant to practising architecture. That recommendation would see owners of buildings requiring the design services of more than one professional consultant designate either a professional engineer or an architect "as the prime consultant to perform the roles and responsibilities of that position, as designed by one or the other or both" of PEO and OAA.

In testimony before the inquiry, it came to light that during the initial construction of the Algo Centre Mall, there was confusion among the architect, the lead engineer, the project manager and the building's owner as to who would take responsibility for some of the final design elements, in particular the building's waterproofing system.

In a forensic investigation of the causes of the collapse, Toronto-based Norr Group found that severe rusting of a connection between a beam and column supporting the mall's rooftop parking lot was the main reason for the collapse. Despite some half-hearted waterproofing efforts over the years, the mall rooftop parking lot leaked extensively throughout its 33-year existence.

"OAA is looking forward to working with our industry partners to define the prime consultant, as outlined in the recommendations," Birdsell told *Engineering Dimensions*. "The emphasis on the importance of that role is particularly meaningful to our practitioners."

Although OAA did not seek standing at the inquiry, Birdsell participated in the expert roundtables that set the stage for a number of the report's final recommendations. "We appreciated the invitation from Justice Bélanger to participate in the stakeholder roundtables," Birdsell says. "We submitted 74 pages of recommendations and we were pleased to see some of those were strongly considered by Justice Bélanger and his team."



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OFFICIALS IN THE SPOTLIGHT

In addition to engineers and architects, the Elliot Lake building department was also in the spotlight during the Bélanger inquiry. The report criticizes both municipal and elected officials for being uncertain of their roles and responsibilities, and for being too closely allied with the mall's owners. "Municipal authorities did not enforce, or improperly enforced, their own property standards bylaws," Justice Bélanger observed in the report. "Some public officials were apparently unaware of the contents of their own bylaws. The municipality's predominant focus was non-interference with the mall, because it was regarded as the social hub of the community and as a major source of tax revenue and employment."

For the Ontario Building Officials Association (OBOA), the Elliot Lake review was an eye-opening experience. OBOA is the association supporting Ontario building officials by delivering training and certification, and promoting uniform code application to its membership.

"As a profession we often go unnoticed until such issues arise, which underline the importance of what we do," observed OBOA Vice President Alan Shaw, Sarnia's chief building official. "Throughout the inquiry it was clear that our role, responsibility and legal duty are largely unknown to those within our industry, places of employment and the public, in general. Often seen as unnecessary hurdles in the way of business or development, it continues to be debated whether individuals providing independent, unbiased reviews and approvals of professionals' work need to be certified by a provincial body. Our association needs to do a better job promoting our members and what we do."

Overall, Shaw says, OBOA is "pleased with the far-ranging review of issues carried out by the commission, and the balanced and innovative recommendations made in the report to strengthen the existing system of public safety in buildings." In particular, he notes with approval "the commission's overall conclusion that municipal building officials

should be appropriately trained and certified. We support the commission's recommendation that the *Building Code Act* be amended to require mandatory continuing education for such officials, and that they be recognized as fully independent in carrying out their responsibilities."

TECHNICIANS AND TECHNOLOGISTS

The Ontario Association of Certified Engineering Technicians and Technologists (OACETT) is also keen on tightening up the regulatory framework when it comes to building safety.

OACETT is Ontario's independent certifying body for engineering and applied science technicians and technologists. OACETT does not issue licences but certifies its members in several disciplines, including the building sector.

"The tragedy of the collapse of the mall in Elliot Lake and the subsequent inquiry and recommendations reinforce the importance of those involved in the building industry to maintain vigilance in their conduct, and the need for professionals, including engineers, technicians and technologists, to work collaboratively for the protection of the public," says OACETT CEO David Thomson.

"Moreover, the lessons learned reinforce the need for increased vigilance in the performance of duties to protect the public for all professionals, regardless of discipline."

OACETT, which had standing at the Elliot Lake inquiry and participated in the roundtables, supports the final report's recommendations for mandated structural adequacy reports for certain existing buildings and the establishment of a PEO performance standard for structural inspections.

While Thomson believes the public remains reasonably well disposed to the conduct of Ontario's building/design professional community, he is concerned that the "serious weaknesses" identified by the inquiry must be addressed fairly quickly to maintain the public's confidence.

"The Bélanger inquiry was blunt in its assessment of the weaknesses of the existing system," Thomson says. "Legislatures have been fit to delegate authorities to self-governing professions to protect the public. Such recommendations as the need for mandatory professional development need to be recognized as an example of a reasonable measure to ensure adequate protection of the public."

OACETT, he notes, is taking aggressive action in expanding professional development for its members, including mandatory continuing professional development.

REPUTATIONS AT STAKE

At a time of increasing scrutiny of self-regulated professions, the Algo Centre Mall collapse and the subsequent inquiry could be a watershed moment for PEO.

Recommendation 1.24 of the Bélanger report calls on PEO to establish a mandatory continuing education system as soon as possible and no later than 18 months from the October 2014 release of the report. In fact, PEO council had already established its Continuing Professional Development, Competency and Quality Assurance Task Force to make recommendations to council by the end of 2015 on developing a continuing professional development program for PEO.

In addition, the "earnest" implementation of Elliot Lake Commission of Inquiry recommendations has been made a strategic objective of PEO's recently approved 2015-2017 Strategic Plan (see In Council, p. 46). At the same meeting, council approved the review of a draft implementation plan for the Elliot Lake recommendations requiring PEO actions, and directed the committees identified in the plan as playing a role in implementing it to give it the highest priority in their work plans. The draft implementation plan has been endorsed by PEO's ELAC as its last action as a committee. Its members will, however, remain available as a resource to those implementing the plan.

Yet as PEO and others involved in building design, construction and regulation learn the lessons and work to put in place the changes recommended by Commissioner Bélanger, they must also pay heed to public perception.

As Danny Young, P.Eng., president, Ontario Society of Professional Engineers, noted at PEO's Queen's Park reception: "The goal of all engineers is to rebuild the public's trust in our ability and responsibility to serve and protect the public interest. [OSPE] will continue our dialogue with PEO as they work to finalize the continuous education program that the [Bélanger] commission recommends."

"In the end, a reputation is something that is earned by one's actions," Roney says. "Though the engineering profession's reputation was certainly tarnished by the events leading up to the collapse, I strongly believe that PEO's strong and swift actions in response to this tragedy are something to be proud of." Σ

The two-part report of the Elliot Lake inquiry was released on October 15, 2014, and is available in its entirety at www.attorneygeneral.jus.gov.on.ca/inquiries/elliottlake/report/index.html. A copy of the report can be obtained through Service Ontario Publications by visiting www.serviceontario.ca/publications or by calling 800-668-9938.