

TEMPORARY AND UNFINISHED WORKS AND STRUCTURES

The engineer as a key player in preventing a collapse

The Commission de la santé et de la sécurité du travail (CSST) recently launched a campaign aimed at raising awareness concerning the safety of temporary works or constructions and unfinished structures. The Ordre joins the CSST in this venture and wishes to remind engineers of their crucial role in this regard on site. How well do we know this role?

In Québec, during the last few years, we have seen that the measures taken to stabilize temporary works and unfinished structures have, in many cases, proven to be lacking in strength and solidity. This inadequate application of safety regulations has caused buildings and structures to collapse, at times, leading to injuries and deaths.

The CSST is adamant: collapse prevention concerns all those on site. However, not only is he or she bound by contractual obligations, the engineer has, above all, a professional duty to that effect. In light of that responsibility:

"In all aspects of his work, the engineer must respect his obligations towards man and take into account the consequences of the performance of his work on the environment and on the life, health and property of every person." (Code of ethics of engineers, R.Q., c. I-9, r. 3, s. 2.01)

Given the know-how and the level of expertise exclusive to the engineer, he or she has the considerable advantage of being in a position to contribute to the safety of a work site through accurate plans and specifications, as well as clear guidelines, procedures and methods setting out all the particular difficulties relating to the performance of the work. All cannot be left, nor should it be left, in the hands of the contractor or of his subcontractors, although any one of them can retain an engineer to guide and monitor their work. During the course of the work, the engineer is more qualified than any other person to be able to assess the risks, detect potentially dangerous situations and offer solutions.

However, in real life, an engineer is not always called upon to control or supervise a site. Clients may consider that the plans and specifications are sufficient to secure the site. We now know that this is not the case; something unexpected seems to always happen so quickly... Consequently, the Ordre invites every engineer working in the construction field to fully assume their role and efficiently monitor the sites on which they are collaborating. Clients and owners can only benefit from this; on a job site, the engineer brings forth added security, controls the quality of the work and ensures compliance with all plans and specifications.

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Alternately and equally as important, retaining the services of an engineer is a tremendous help in proving "reasonable care" with respect to preventing occupational injuries and diseases, a general commitment incumbent upon all employers pursuant to the Occupational Health and Safety Act, and an even more demanding obligation in light of an official programme dedicated to prevention. In that respect, it bears repeating that an organisation can be held criminally liable in case of a work-related accident.

IT'S TEMPORARY... WHY INVEST TIME AND MONEY?

This question is rarely asked out loud but is often inferred when a temporary work is built. Why invest in something that will only be used a few days or weeks? And yet, all scaffolding, formwork, bracing, shoring, platforms and other temporary structures require as much thoroughness and professionalism as the permanent works or structures that will follow.

Falling scaffolding, collapsing trenches, crumbling roof trusses, faulty concrete slabs... all of these unfortunate situations and their devastating consequences could often be avoided if adequate security measures had been put in place during the work. In its recent flyer, the CSST stressed the importance of thoroughly planning and organising the work. More particularly, the CSST focuses on temporary bracings, structural elements joined together to prevent the framework from becoming distorted or from tipping over.

The CSST also reminds all those involved on a site of their obligations regarding the stability of the works and structures. Additionally, these obligations are clearly defined in the Safety Code for the construction industry. Among others, let us mention section 2.12.1 which states that: "Any framework shall be

calculated, constructed, placed, supported, wind-braced or guyed to resist any load which could be imposed during construction or demolition.”

Similarly, any temporary structure as well as scaffoldings shall be sufficiently braced, and the plans relating to such braces shall be prepared and signed by an engineer (ss. 3.3.2 and 3.9.2 9 (a)). The shoring of concrete formwork must be subject to a plan signed and sealed by an engineer as well as a compliance certificate signed by an engineer (ss. 2.4.1.2 (b) and 2.4.1.4). Finally, the CSST’s inspector may require a statement, signed and sealed by an engineer, certifying that the construction or installation is safe (s. 3.3.5).

Clearly, engineers play a key role when it comes to preventing collapses!

* To read or download this flyer, go to:
www.csst.qc.ca/portail/fr/publications/dc_100_1097_1.htm