

By Mélodie Sullivan, attorney

Incompetence and its consequences

It can be very tempting to quickly accept a mandate without fully considering if we possess the know-how required to carry it through. The following case involves an engineer who faced disciplinary measures for having misjudged the extent of his expertise and whose negligence and poor quality of work brought about very unfortunate consequences.

A SECOND SIMILAR COMPLAINT

In March of 2006, an engineer engaged in private practice in the Montréal area took on a mandate to design a temporary retaining wall which would serve to allow the construction of a rental building's foundation walls. Shortly thereafter, namely on the 14th of May, the retaining wall for which the engineer had prepared the plans crumbled.

Upon being informed of this incident by the Commission de la santé et de la sécurité du travail (CSST), the Ordre's Office of the Syndic launched an investigation which resulted in a complaint¹ filed against the engineer listing the following five charges:

- Having omitted or neglected to bear in mind the extent of his proficiency and aptitudes as well as the means at his disposal to carry out the mandate, before accepting such mandate, thereby violating section 3.01.01 of the Code of ethics of engineers (hereafter "the Code");
- Having omitted or neglected to 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 by preparing or producing plans which did not comply with the Québec Building Code or the Safety Code for the construction industry, in particular, which were not based on sufficient knowledge of the area and soil conditions, and which were incomplete, ambiguous and insufficiently explicit, thereby violating sections 2.01, 2.04 and 3.02.04 of the Code;
- Having omitted or neglected to 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 by preparing or producing plans relating to a concrete block which were not based on sufficient knowledge of the facts pertaining namely to the area, soil conditions and existing loads, and which were incomplete, ambiguous and insufficiently explicit, thereby violating sections 2.01, 2.04 and 3.02.04 of the Code;
- During a visit to the work site, having omitted or neglected to 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 by producing a document entitled « Inspection Report » which did not comply with the Safety Code for the construction industry, in particular, which was not based on sufficient

knowledge of the area and soil conditions, and which was incomplete, ambiguous and insufficiently explicit, thereby violating sections 2.01, 2.04 and 3.02.04 of the Code;

- Having omitted or neglected to keep certain calculations and data in his technical record and having omitted to keep such record for a minimum period of 10 years from the date of the last service rendered or from the date of the end of the work, thereby violating section 2.04 of the Regulation respecting the keeping of records and consulting offices by engineers.

It should be noted that three of the counts in this complaint refer to the same sections of the Code of ethics of engineers which read as follows:

2.01. 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.

2.04. The engineer shall express his opinion on matters dealing with engineering only if such opinion is based on sufficient knowledge and honest convictions.

3.02.04. An engineer must refrain from expressing or giving contradictory or incomplete opinions or advice, and from presenting or using plans, specifications and other documents which he knows to be ambiguous or which are not sufficiently explicit.

It also bears mentioning that in 2001, this engineer was found guilty of having violated certain rules of professional conduct thereby shedding doubt on his professional practices as well as his thoroughness. He also pleaded guilty as regards this second complaint after having fully cooperated with the investigation.

A RETAINING WALL THAT DIDN'T RETAIN MUCH

This entire story is based on a retaining wall which did not fulfill its purpose.

In order to design the retaining wall, all the engineer had at his disposal were some drawings made by a non-engineer as well as a few pieces of basic information contained in a letter entitled "Analysis report pertaining to the soil" (« Rapport d'étude de sol »), a copy of which he had received. This letter had been prepared for other purposes and did not provide the information necessary for designing this type of work. It did however indicate that certain problems were likely to occur.

The respondent had done the calculations relating to the columns and the concrete without taking into account the wall's geometry, thereby neglecting to consider an important portion of the pressure against the wall. He omitted to calculate the tension capacity of the ties bolted to the ground and did not validate the soil analysis. Instead, he relied on the information he

1. Rémi Alarent, Eng., v. Avnish Rughani, Eng., CDOIQ 22-07-0354.

received without knowing whether it was the iron material's resistance or the resistance relating to the pulling out from the ground that determined the tension capacity of the screwed iron.

The engineer did not take possible rainfalls into account and did not provide for any type of drainage. He did not consider the possibility that the ground's resistance may be diminished when the soil is saturated by water which, in turn, also increases the mass.

Finally, even the proposed construction method was unsafe and could have caused a collapse, which rendered the site all the more dangerous.

Shortly after, the retaining wall gave in as a result of water saturated clay soil and partially collapsed, the consequences of which were considerable. The part of the site affected by the collapse had to be shut down temporarily: an electrical line located near the property line had to be powered off and neighbouring slopes had to be stabilized. Three teams of Hydro-Québec line workers had to come to the site to relocate electricity poles and a technical expert had to be called in to assess the situation. Thankfully, there were no injuries given that the collapse occurred on a Sunday.

The investigation revealed that the engineer had never designed anything of this sort and that prior to this one, he had only done one retaining wall in his career a long time ago.

AT THE HEART OF THE ENGINEER'S LIABILITY

Based on the conclusions of the technical analysis as well as the CSST report, the respondent lacked experience on three counts: he did not know the area nor the soil and he had limited knowledge in terms of anchoring. The report he produced the day after the incident was not based on sufficient knowledge. Consequently, having been incapable to measure up to good engineering practices, the engineer did not respect the environment nor the health or lives of people around him, a duty which lies at the heart of his professional liability.

When rendering its sentence, the Ordre's Disciplinary Council considered that the respondent understood the severity of his actions and that he showed heartfelt remorse. The Council found the engineer guilty on all counts and ordered that he be stricken off the Roll for five periods of five months, to be served concurrently; the Council also ordered that the respondent pay a \$600 fine, plus disbursements, as well as the costs associated with the expert report required by the assistant syndic. Furthermore, the Council ordered that a notice of its decision be published in a newspaper distributed in the same area as the engineer's professional domicile.