

MUNICIPAL ENGINEERING

A most enlightening competency profile!

During the past few months, we have presented various competency profiles which can be found in the Ordre’s Guidelines to Professional Practice (www.gpp.oiq.qc.ca, “Professional Development” section). Today, the article is intended for engineers who practise municipal engineering.

The Ordre may impose limitations on a municipal engineer’s right to practise for a period of time in order to allow the engineer to acquire the necessary skills and training. Indeed, the temptation is great for engineers specialized in building mechanics to take the leap into municipal engineering, to go “beyond the metre”, as they say in the field, indicating the distance that separates the building from the municipal infrastructure. After all, between the pipes in a building and those in a municipality, what’s the difference?

We could answer: a very big difference. In building mechanics, engineers must comply with the Québec Plumbing Code, whereas in municipal engineering, they must follow the guidelines established by the ministère du Développement durable, de l’Environnement, de la Faune et des Parcs. These guidelines relate to particular infrastructures, such as wastewater systems and aqueducts, and once these works are completed, they have to be examined and certified by the government, in accordance with the Environment Quality Act.

Even though the basic training is the same for both building mechanics and municipal engineers, university specialization separates the two. This distance becomes even greater considering the four to five years of experience required for both to acquire full professional autonomy.

A COMPETENCY PROFILE INTENDED FOR WHOM?

The Ordre always strives to guide engineers throughout their professional careers as well as help them pinpoint and correct their shortcomings. The competency profile is one of the tools the Ordre provides to its members.

For example, engineers who use the competency profile can come to realize that they do not follow all the steps necessary to carry out a particular technical task or that they are not familiar with a method mentioned in the profile. In short, they can identify their limitations and take the appropriate training courses. If this introspection can prove

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to be personally taxing, it can still be very beneficial on a professional level for engineers who chose to go through the exercise!

In fact, every engineer who practises in municipal engineering can benefit from using the competency profile. Young engineers who wish to broaden their knowledge and gain more experience will find a table of contents regarding what they need to learn and experience. Seasoned engineers can browse through it and re-examine their practice and ensure that they have not forgotten or neglected certain aspects throughout the years.

WHAT TOPICS ARE COVERED?

Focused mainly on the technical aspects of the practice, the municipal engineering competency profile covers a wide range of subjects, which reflects the diversity of the field. Engineers can select sections that interest or concern them.

From taking part in the planning of a territory to implementing public utilities systems, the tool follows a progressive course which tackles various themes, such as:

- Applying a management and implementation process to projects;
- Ensuring the engineering and development of wastewater collection systems;
- Ensuring the engineering and development of drinking water distribution systems;
- Ensuring the engineering and development of drainage structures;
- Ensuring the engineering and development of municipal transportation infrastructures;
- Ensuring the engineering and development of infrastructures relating to parks and green spaces;
- Ensuring the engineering and development of environmental hygiene infrastructures.

Some competencies are quite detailed because they are deemed critical to the public’s safety and client investment.

These comprehensive descriptions set forth the main tasks that engineers must be able to carry out and, if needed, the key actions associated with those tasks. Finally, the profile lists general competencies, namely the skills and qualities engineers must possess and demonstrate on a daily basis.

HOW TO USE THE PROFILE DAY TO DAY?

The competency profile can also help in preparing files by providing a to-do list. Here are a few fictitious cases:

- An engineer asked to analyze the needs in drinking water and wastewater management for a future mining camp in northern Québec will refer to Section A, item 3 of the competency profile;
- Analyzing drinking water distribution and wastewater collection in Griffintown, an old industrial neighbourhood in Montréal currently undergoing a revitalization, will be done based on Sections D and C respectively, where the engineer can take existing infrastructures into account;
- For planning the management of runoff caused by the construction of a new tunnel, taking into account climate changes and technological developments, the engineer will refer to Section E, item 7.

In short, there are many reasons one should use the municipal engineering competency profile. Whatever the reason, this tool will fulfill its goal if it leads you to ask yourself these two questions: am I doing all the right things? Am I doing them correctly?

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