

BUILDING MECHANICS

A competency profile and a checklist

Our presentation of competency profiles continues this time with building mechanics. To read this most useful document, visit www.gpp.oiq.qc.ca and click on the green section entitled "Professional Development".

It is said that people often disregard building mechanics... that is, until they fail. Still, there is a certain truth to this witty remark, namely that this field often goes unnoticed. Nevertheless, expectations are high when it comes to building mechanics; not only does it deal with a given building's users' quality of life, they also represent one of the main expenses in a construction project and require an important part of the operation costs.

Given this context, engineers in building mechanics often work under pressure; they must comply with budgets and time constraints, and, of course, ensure that quality equipment and systems are installed. Their competencies in the field come from various sources – information shared with colleagues, reading material, training, etc. – all of which are not always complete or reliable. Engineers may have shortcomings which can be more or less serious, and this, possibly without even realizing it! This is where the competency profile becomes such a useful tool since it helps engineers pinpoint areas that may need fine-tuning.

A TOOL FOR EVERYONE

No educational institution can provide comprehensive practical training in building mechanics engineering since it would be impossible to cover such a wide and complex field in just a few years. Young engineers interested in this area of practice may be discouraged or frustrated by this fact, but completing their training remains critical. How? Most often through self-training, on site, by dealing with seasoned engineers. At this point, a few questions come to mind: are they acquiring the best and most relevant skills? Is the knowledge gained complete and up to date? Are they truly covering each question in its entirety?

For their part, seasoned engineers know that it is not easy to keep their competencies up to date, particularly with respect to standards and regulations. Certain areas, such as energy efficiency, automatic regulation and sustainable development, change rapidly and it is important to keep up with this evolution in order to convey their benefits to clients and society as a whole. They must also keep in mind a multitude of details in mind throughout a given project. Are they verifying every possible element? Are they forgetting a

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part of their professional practice?

The building mechanics competency profile can help all engineers who specialize in this field answer their questions. Designed according to a chronological basis, it follows the various phases of a project, from the time the mandate is awarded to the preparation of a system handbook. Engineers will find a list of main competencies necessary to carry out a given task. Some competencies are detailed, like "Formalizing a mandate in a letter or contract", "Producing a set of plans" or "Verifying whether works are compliant with plans and specifications".

A step-by-step presentation offers great benefits. In fact, the profile enables one to uncover one's weaknesses and shortcomings, which is the profile's primary goal. It also serves as a checklist for engineers who wish to make sure that they have not forgotten anything during the course of the mandate. It can even be seen as a work process in which every area of building mechanics is presented: ventilation and air conditioning, heating and cooling, plumbing, regulation, etc.

ENGINEERS' MOST COMMON SHORTCOMINGS

What are the weaknesses most often observed in engineers who practise in building mechanics? Those who developed the competency profile (see the list in the sidebar) know them well. Here are a few examples.

First of all, knowledge of codes and standards. Engineers must master codes and standards as well as be aware of all modifications.

This area is as arduous as it is diversified. Other than the Construction Code, each discipline has its own standards, which change over time. Moreover, municipalities,

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Competency profile in building mechanics

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other competency profiles. This reference tool fosters the professional inspection's objectivity, standardizes the inquiry process and, as the case may be, allows engineers to pinpoint those skills that they must develop or improve.

In short, this unique tool helps many engineers in many ways. Look it up!

insurance companies and a number of other interested parties can, depending on the mandate, draw on one version of the Code rather than another, or a specific variance... By referring to point B2 of the competency profiles, engineers will be able to see if they are applying the codes, standards and regulations correctly.

Called upon to concentrate on their design, engineers in building mechanics must also blend their work with that of others working in other fields. Mistakes in that respect can give rise to many others and result in unwanted consequences. Point D11 of the competency profile spells out the competencies that engineers must possess in order to coordinate their design with other stakeholders' concepts.

Too often, certain engineers in building mechanics rely on a rule of thumb in cases where scientific and accurate calculations are required.

Without dismissing the usefulness of rules of thumb for estimations or approximate results, the competency profile reminds us, at point E, how important it is to base our calculations on proven methods.

A SEAMLESS PROCESS

Inspectors at the Ordre's Professional Inspection Committee as well as engineers in building mechanics visited by these inspectors welcome this competency profile with great satisfaction, as is the case with the