

## Designing for complexity: how to optimize metering in mixed-use buildings

As the number of mixed-use developments continues to grow, appropriate integration of sub-metering systems, especially in new construction developments, is critical. Enercare Connections is proud to partner with MMM Group, one of Canada's leading building service firms. MMM Group provides project management services for new construction sub-metering projects, working in the areas of design preparation and implementation of electrical, water, thermal, and gas sub-metering solutions.

Enercare Connections recently sat down with Omar Salihbegovic, an electrical engineering associate with MMM Group, to hear his perspective on sub-metering in mixed-use developments.

### **What are the two most important things for developers to know about sub-metering for mixed-use buildings?**

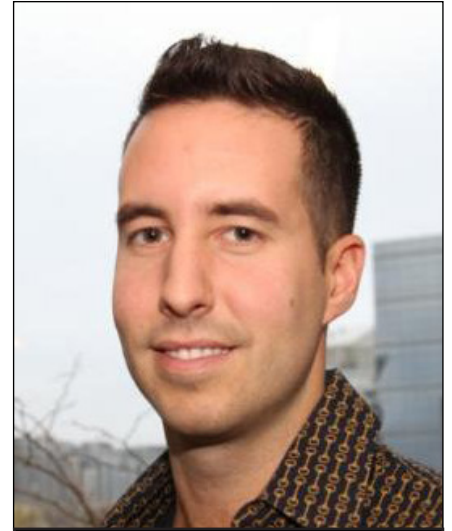
First, there are significant cost savings for developers if they include sub-metering designers earlier on in the process. This allows everyone—the metering designers, developer consultant, and contractors—to coordinate from the start. Second, developers need to think of their end-users, such as the property managers and residential suite owners, and what sorts of challenges they may have when trying to pay their utility bills. It's important to make sure their needs are addressed at the time of the metering design.

### **What's surprised you the most in working with these types of developments?**

Most developers and base building consultants address metering as an afterthought, even though the concept of mixed-use development has been around for years. Developers must address sub-metering earlier on in their projects in order to avoid conflicts in the future, such as shared facility utility allocation. Often we're playing a catch up game last minute to fulfill developers' needs for shared metered facilities.

### **The number of mixed-use developments in Canadian cities has grown significantly. From a technical perspective, what is the most significant difference between mixed-use versus single-use?**

A single-use building requires less metering equipment and the metering design can be incorporated in later stages of the project without as much of a financial impact. For mixed-use developments, however, sub-metering design needs to be incorporated during the design phase or earlier—it's a lot more difficult to do after the project has been started.



**Meet Omar Salihbegovic**

Omar Salihbegovic is an Associate with MMM Group Limited, leading a group that implements and provides construction phase services and metering designs for some of the GTA's largest mixed-use developments. Since 2002, MMM Group has provided engineering, project management, construction coordination, and meter commissioning services for Enercare in the new construction markets.



### **What are the impacts of incorporating sub-metering after a project has started?**

It's more efficient to design a sub-metering plan from the outset versus for a retrofit. While each project is different, there are additional labour, operational, material costs, and project management fees. It's also easier to involve the base-building contractor during construction and to install the sub-metering equipment in conjunction with the rest of the installations, as opposed to a third party who isn't as familiar with the property.

### **Is there still an economic case then to be made for retrofits?**

It's never too late, especially given the long-term trend in energy prices. In the future, water, gas and thermal metering may also be mandated, which will result in building owners needing to address sub-metering in retrofit applications.

### **How are shared spaces like lobbies or parking garages dealt with?**

The process begins with getting input from the developer or building owner, and then assessing what kinds of entities are involved. These can include condos, hotels, and commercial spaces. This is important because shared facilities can vary depending on the design of the building, and these need to be categorized based on which entities are sharing. The second step is often intensive coordination with the electrical and mechanical base building designers to determine how metering design fits in. Often, there are synergies where the base building design can simplify the metering design and vice-versa.

### **What kind of technology can the industry look forward to in the future?**

Calibration of mechanical metering equipment will be top-of-mind. Thermal metering, especially in Canada, is a growing field. Whereas electricity and gas metering is regulated, and will likely experience minor improvements in the years to come, thermal metering will likely see the biggest changes and progress being made as adoption increases and standards are introduced.



*Enercare Connections worked in close partnership with MMM Group and developer TMG Builders on electricity sub-metering design and installation at Emerald Park, a mixed-use development comprising 42 and 33 storey towers plus a retail/commercial podium in north Toronto's fast-growing Yonge and Sheppard neighbourhood.*