Leadership in Sustainable Infrastructure
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Case Study

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ACHIEVING ORGANIZATIONAL QUALITY MANAGEMENT: A MUNICIPAL PERSPECTIVE

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1 Introduction

This case study describes the preparation that the City of Vancouver undertook to obtain the Organizational Quality Management (OQM) Certification from the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC) and the lessons learned from its implementation.

2 Overview

In 2014, the City of Vancouver (CoV) decided to work towards achieving the APEGBC's Organizational Quality Management (OQM) Certification. The main reason for the initiative was to ensure that the Engineering Services Department had standardized practices and processes that govern the delivery of engineering works. The value of the OQM was also recognized as a means to provide for a foundational level of support to the professional engineers in the organization (i.e., to ensure that they adhere to the applicable APEGBC Quality Management Guidelines and achieve a certain level of quality in their engineering work). It was initiated together with the development of a Project Management Framework to standardize the processes and tools within the Engineering Services Department appropriate to the City's unique "three-in-one" context as owner, designer and builder.

The scope of the project included 14 unique branches that consists of about 600 employees, approximately 100 of which are practicing professional engineers. The engineering work performed within these branches range from policy development, to reviewing external 3rd party designs, to in-house design and construction of over $100M municipal infrastructure capital works annually (road, utility, electrical, solid waste management, etc.).

Each branch identified an OQM Lead who was fully involved in the development and documentation of policies and processes to fulfill the seven (7) OQM requirements. The OQM Leads also trained their colleagues on the policies and processes. After more than a year of preparation, the City of Vancouver successfully received its OQM Certification in March 2016.

Sustainment of the OQM to ensure its continued effectiveness is an on-going endeavour that the CoV is committed to. Quality Audits are now conducted regularly and findings are addressed to continually improve conformance to OQM requirements, along with on-going training of staff.

3 Innovation

Unlike most municipalities, the CoV operates on a unique “three-in-one” context as owner, designer, and builder. Given the fact that majority of engineering designs and works are executed in-house, it is extremely important to maintain a level of project quality, which an OQM provides. The CoV is the first municipality in British Columbia that obtained the APEGBC OQM Certification.

4 Lessons Learned

4.1 What worked

1. The OQM was given priority and support by senior management, resulting in higher engagement from branch management and staff (OQM Leads and Senior Engineers).
2. APEGBC provided on-going support during the roll-out in terms of clarifying requirements.
3. The OQM implementation and Lessons Learned from external Design-Build contracts resulted in the identification of the need to standardize city design specifications (i.e., spin-offs).
4. There is now an increased collaboration amongst the design branches in terms of process and tool development and updates due to a common goal (i.e., compliance with the applicable Quality Management Guidelines).
5. Engineering staffing levels are now reviewed based on risk priority/complexity matrix.
6. Evaluation of conformance through Internal Quality Audits has resulted in increased awareness of OQM requirements and in improving OQM effectiveness. The emphasis on identifying opportunities for improvement rather than on finding mistakes has also helped in achieving full cooperation from staff.
7. Continual improvement is now the norm within the 14 branches under the OQM Certification, which makes the CoV at par with best industry practices as well as providing more value to the public.

4.2 Challenges

1. The development of the OQM documentation was undertaken by each branch individually, with oversight by the project team. The resulting documentation is therefore adapted to the needs of each branch within Engineering Services Department. As a result, there remains a room for improvement in terms of harmonizing the various Quality Manuals and processes across branches, and the potential development of a consolidated and integrated Engineering-wide OQM Quality Manual.
2. There would have been important time savings achieved had the OQM documentation been developed as a single, department-wide document, instead of multiple branch-level documents.
3. While implementing OQM has enabled an improvement in the application and documentation of APEGBC’s quality management requirements across the department, the sustainment of the OQM Certification is contingent on ongoing training and support, as well as project audits and continual improvement process. Regular staff turn-over, sustaining behavioural change, and overcoming workload pressures have led Engineering Services Department to put together an ongoing program of training, quality assurance and support to the branches.
4. There is room for adoption of OQM principles across a wider portion of tasks within the Engineering Services Department, as well as non-engineering-related tasks. The department is aiming to learn from and replicate the use of OQM principles in areas of policy development, project management, and strategic initiatives.
5. Some processes developed prior to OQM Certification were not streamlined and roles were not fully clarified, resulting in subsequent updates.