Integrated Systems and Infrastructure Solutions

2008 GLOBAL EXCELLENCE AWARDS

Location
Greater Toronto Area, Ontario, Canada

Client
407 ETR Concession Company /Ontario Ministry of Transportation

Project Manager
John Washington

407 ETR
QUALITY MANAGEMENT OVERSIGHT SERVICES

The 407 Express Toll Route (ETR) central section design-build contract was one of the largest single engineering contracts in Canadian history and the first of this magnitude in Ontario. The $1 billion project encompassed a 69 kilometer, six-lane highway with approximately 120 new bridges, as well as six major highway-to-highway interchanges.

Delcan was responsible to the original owners, a Crown Corporation, for design review, payment verification, compliance audit during construction and project commissioning. Our Independent Agent team provided a quality focus for the project, delivering up-to-date information on the developer's performance through monthly reports of audit results in graphical format. The Delcan project team developed simple auditing processes and supported these with databases. The 407 Independent Agent project resulted in the initial development, validation and branding of Compliance Auditing Services as a cost effective means for owners to manage design-build projects.

In 1999, following the successful completion of the central section, the government privatized the facility through a 99-year, $3.2 billion concession to manage, operate and maintain the highway. Audit results and data from our Independent Agent activities formed an important part of the disclosure documents that were made available to prospective bidders. The successful Concessionaire was required to extend the existing Hwy 407 for an additional length of 39 kilometer including related structures. The extensions were delivered using a design-build prime contract and construction management technique to manage multiple sub-contractors.

In 2000, Delcan was retained by the 407 ETR Concession Company in the role of Independent Auditor (IA). The overall scope of this role was defined within the Concession Contract and required the IA to investigate and report on the Concessionaire's adherence to its Plans for managing and controlling the safe delivery

of design and construction work. In order to effectively discharge this responsibility, the IA team developed its compliance auditing techniques to focus on quality and safety management together with the design and construction compliance to safety standards. A new technique, Traffic Interface Auditing, was developed to gather data regarding the fitness of a highway for opening.

In 2002, following completion of the east and westerly extensions, Delcan's role was expanded to focus on the operation and maintenance activities of the highway operator. The operations audit program resulted in the development of requirements and measurement criteria unique to facility condition and maintenance activities, and development of a new database tool.

The expansion of the IA scope into operations and maintenance was significant since it was the catalyst for the first development of the oversight approach into the operations and maintenance of facilities. The focus of this operations oversight is to demonstrate that by the use of appropriate proactive and reactive inspection and maintenance activities, the facility operator is maintaining the facility in a condition that meets government standards.

Client Impact/Value

Delcan's goal with Quality Management Oversight (QMO) projects is to assist the owner in defining the project in terms of its requirements, classifying the risks, identifying the most appropriate party to manage them, and planning the methods by which attainment of the requirements can be verified and the project work eventually accepted. Throughout the implementation of the project, the early investment results in a more straightforward, efficient and transparent process by which the owner can measure the design-builder performance, verify the attainment of the requirements and eventually accept the work. This offers savings in both the cost of project oversight and potentially the cost of the infrastructure delivery itself.

Industry Impact/Value

As more participants in the infrastructure industry adopt management systems, the need for meaningful measures of performance increases. QMO projects at Tacoma, Colorado Springs, Baltimore and St Louis have all used variations of a performance matrix developed by Delcan's T-REX project team.

Community Impact/Value

On most QMO projects, what the community sees is the construction of a piece of infrastructure, its impact on its surroundings as it grows and the time taken for it to come into use. Over time, they will discover its construction cost and they will make judgment on its value, based on media reports of problems, budget over-runs, on or off-schedule openings, etc. Larger projects are increasingly using a communications officer to provide regular reports of the project progress to the community and handle inquiries from the public, and Delcan's contribution to that information flow is through the results of the QMO program. On public works, this kind of information is important to public and government alike since it demonstrates that the owner is truly knowledgeable about the quality of the work and in control, and it suggests that a robust end product will result, thus representing good value for money.

Areas of Innovation

The entirety of QMO services is an innovation that uses the established practices of requirements management, risk assessment, auditing and data management in a new and innovative way. The development of QMO in its current form has occurred on more than 10 projects across North America spanning more than ten years, with the vision and effort of more than a dozen of Delcan's current project personnel. And going forward, each new project opportunity provides a vehicle by which the QMO concepts and best practices can be applied in new areas.