



Managing Quality in Architecture

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QFD | TQM | ISO Fads, Fancy or Factual Benefit?

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At the time he wrote this, Holness was Chairman and CEO of Albert Kahn Associates, Inc.

Total Quality Management programs have been around for many years in a variety of forms. Many are the offspring of Dr. William Edwards Deming's doctrinations to the Japanese in the 1950s and 60s. Subsequent quality gurus such as Crosby, Duran, Hayden and others have trumpeted the message that quality is the key to corporate success. In an increasingly competitive marketplace, both nationally and globally, the provision of a quality product, delivered on time and within budget, is seen as a prerequisite for successful business practice, whether it is in the manufacturing industries, or in the service and design arenas. Consistent delivery of quality can only be achieved by using repeatable and sustainable practices.

In more recent times, various quality certification programs have been promoted. Today the International Organization for Standardization, located in Geneva, has developed a series of standards for industry. Emanating out of Europe, ISO now has 60 member countries. It is rapidly becoming the predominant standard for the automotive and aircraft industries. ISO Standards such ISO 9000 (1987) cover quality management and quality assurance guidelines for manufacturing companies, while ISO 9001 (1994) provides similar guidelines related to service industries. While ISO has gained widespread acceptance in Europe and Asia, it is only now beginning to make significant inroads in the US.

It is important to recognize that ISO offers a set of policies and procedures guiding the design, development and delivery of services. ISO itself does not ensure quality, but it does establish a structure for consistent delivery of product and services. Quality Operating Systems (QOS) can serve as the basis for continuous improvement and, when coupled with Total Quality Management (TQM) programs, can significantly improve not only quality but also productivity. Taken together, ISO/TQS can move operations forward from where Quality Function Deployment (QFD) left off.

The questions for architects and engineers today are:

- What are the benefits of these programs?
- Do they really improve quality and efficiency?
- Is the effort to implement the programs worthwhile?
- Can the investment and maintenance costs be justified?
- Or, is all of this just the latest management fad or marketing gimmick?

Even if the answers to all the above are yes, are there potential downsides to these efforts? Certainly! When owners insist on A/Es meeting a certification standard, the first real question to ask is, "Has the Client themselves embraced and implemented the same standards in their own operations?" If not, then they may be setting themselves up for unrealistic and unachievable expectations.

Is there increased liability exposure with or without a TQM/ISO-based quality operating system and a quality assurance policy? The answer could be yes either way. Without TQM, you could be subject to damaging testimony as to the absence of quality assurance being contributory towards your assumed negligence and performance below the "Standard of Care". With ISO/TQM, you had better be sure you do what you say. Absence of documentary evidence of compliance with your own quality plan will leave you even more vulnerable, regardless of relativity to the issue.

The first thing to recognize with any of these programs is that, if they are truly to be successful, then fundamental changes in philosophy, management style and organizational culture are going to have to occur.

As a mid-sized (330-employee) architectural and engineering organization-with a legacy going back over 100 years - we well know the difficulty in changing corporate culture. While the tangible elements are relatively easy to address, it is the intangibles that are difficult to recognize and even harder to change.

Albert Kahn Associates started its Total Quality Service (TQS) Program six years ago at a time when we were successful and content with the quality and content of our product. With the help of a consultant, we spent considerable effort in internal training, the development of our staff, and in understanding TQS philosophies and culture. Probable cost was in excess of \$1.25 million over a period of three years.

Along the way, we became far more customer-focused, developed better client relations and services, established a wide range of benchmarking tools such as issuing client surveys on every project and conducting internal client surveys with our staff. We were the first A/E worldwide to achieve Ford Motor Company's Q1 Certification in 1995, but not before our first audit showed that we had no idea of the realities of establishing a quality system.

As a result of the TQS program we changed our entire organizational structure. With it, we moved away from a technical department-driven, internally-focused operation to an externally-driven market focus group operation with studio teams and team centers. We revised our operations by eliminating top down-driven corporate board committees and going to a cross-sectional TQS Steering Committee with process improvement teams to drive change.

We moved on toward QSA-S/QS 9000 as a common standard for automotive OEMs. We have now completed the final lap of obtaining ISO 9001 Certification in November 1998, learning from each step in the process as we progressed through our gap analysis, pre-assessment audit, preliminary audit, and initial audit. Is that the end? No, it's just the beginning and we have a long way to go with our continuous improvement program. Our internal auditors are identifying necessary corrective action items that we need to address and we will shortly be going through our next external audit to review our progress and assure compliance.

Current expenditures between TQS and ISO are probably in the order of \$2.25 million in personnel time and training. That's a huge investment for a company of our size. Has this expenditure been worthwhile? I personally believe so. Our corporate profitability has steadily and significantly improved (by more than 20%) over the past five years. We are currently in the final phase of an extensive and expensive program to redo our facilities (at a cost of \$4 million) to accommodate and respond to these changes.

As I stated previously, ISO itself does not insure quality. It can be a valuable tool and, when combined with TQS to develop quality operating systems, it can be very effective. While TQS develops the philosophy and culture of an organization, ISO provides the structure to build upon.

ISO does provide focus, discipline and defined responsibilities. It can provide a structured basis to develop systematic programs for improvement. With ISO, there are no halfway measures; it's all or nothing. However, there are a lot of irrationalities in ISO for services companies, something that must be worked out with your auditor. After you get through policies and procedures, there are large philosophical issues to be resolved within your organization as to how far you go in developing work instructions. There are the engineers amongst us who want to document and record everything and then there are the creative architects who want to do things by instinct.

Are we there yet? Not by half! We are just beginning to see the potential. It has been a huge effort with dedicated key resources to make it happen. But we can answer some of the questions already.

Q: What are the benefits? Clearly, ISO can improve the operations of service companies by:

- Development of an integrated and structured operating system
- Disciplined problem-solving
- Measured performance, analysis and corrective action
- Elimination of loose practices
- Improved documentation of policies and procedures
- Establishment of empowered cross-functional teams
- Defined roles for each team member
- Dynamic and systematic approach that is logical and results-oriented

Q: Can these systems really improve quality and efficiency? Unequivocally yes!

Q: Is it a worthwhile investment to make? Only if you are totally committed and do it properly. I do truly believe that a TQS/QOS approach is essential. Whether you go all the way to ISO depends on your client base. But it does have the untapped potential to eliminate waste.

Q: Do these ISO certification programs lead to new clients or markets? Maybe.

Actually, it depends on who they are-particularly industrial clients, say from European companies. Currently, there is only a limited demand in other market sectors. However, we do know that our TQS/Q1 efforts overall have gotten us two or more new clients.

Would we do it again? Absolutely. But I sure hope we would learn from our mistakes because we have made many. We now better understand the process.

As for the future of certification programs, ISO itself is not a panacea for quality improvement. Indeed, it can be a real challenge to implement; it is not for the weak of resolve. However, when used effectively in conjunction with a meaningful quality assurance program, they can have a significant positive impact on the company. As such, I think the market will continue to support them.