TRAINING KIT: QUALITY MANAGEMENT IN THE CONSULTING ENGINEERING INDUSTRY

Electronic Edition

Fédération Internationale des Ingénieurs-Conseils
International Federation of Consulting Engineers
Internationale Vereinigung Beratender Ingenieure
Federación Internacional de Ingenieros Consultores

FIDIC Quality Management Training Kit

September 2001

Introduction

FIDIC (Fédération Internationale des Ingénieurs-Conseils) in the context of services provided to its membership, is proud to present this Quality Management (QM) Training Kit, as a companion document, to the *Guide to Quality Management in the Consulting Engineering Industry* and to the *Guide to the Interpretation and Application of the ISO 9001:2000 Standard for the Consulting Engineering Industry*, both published in the summer of 2001.

FIDIC and Quality Management

Today, FIDIC membership is from more than 60 countries from all parts of the globe and the federation represents most of the private practice consulting engineers in the world.

FIDIC arranges seminars, conferences and other events in the furtherance of its goals: maintenance of high ethical and professional standards; exchange of views and information; discussion of problems of mutual concern among member associations and representatives of the international financial institutions; and development of the engineering profession in developing countries.

Publications include proceedings of various conferences and seminars, information for consulting engineers, project owners and international development agencies, standard pre-qualification forms, contract documents and client/consultant agreements, and more recently, documents on QM. All of the FIDIC products have benefited from the contributions of a number of members, in their production. This Training Kit and the above mentioned Guides are no exception.

The development of a Quality Management System in many firms will often be accompanied by business practices designed to enhance the quality of business management. All firms, as well as FIDIC Member Associations, are encouraged to take advantage of the FIDIC *Quality Management Training Kit* and of the extensive published material, videos, etc., and professional seminars offered by FIDIC and others, on the general subject, and to customise the material for their own specific requirements.

SLIDE 1

Quality Management Training Kit

This set of slides introduces principles of Quality Management (QM), on a generic basis, in order to help firms, who may never have had a formal Quality Management programme, understand the benefits as well as the effort needed to initiate such a programme.

Training programmes for a half-day and two-day training seminars are outlined at the end of the presentation. Attendees will acquire a realistic impression of the content of a training course.

This presentation can inform Member Associations (MA) in general as to the steps needed to implement a QM programme, or it can be used to prepare individuals or groups in a firm for the process. It is covered by copyright, and may not be reproduced or copied in any format whatsoever without the permission of FIDIC. The presentation is available on CD-ROM, in the Microsoft PowerPoint format. To run the presentation, the minimum software requirement is PowerPoint 95. In locations where no computer equipment or large-screen projection equipment is available, the presentation can also be made from overhead slides, which can be made by others from the CD-ROM. The CD-ROM is available separately from FIDIC or as part of the FIDIC *Quality Management Training Kit* package.

The following may be purchased from FIDIC Bookshop at the address given below, and on the FIDIC Bookshop website at www.fidic.org/bookshop:

- a CD-ROM of the presentation in a PowerPoint format together with other useful materials in the Portable Document Format (PDF);
- the FIDIC *Quality Management Training Package* comprising a folder containing the CD-ROM, the present booklet *Training Kit: Quality Management in the Consulting Engineering Industry*, the *Guide to Quality Management in the Consulting Engineering Industry* and the *Guide to the Interpretation and Application of the ISO 9001:2000 Standard for the Consulting Engineering Industry*

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Quality Management Training Kit

FIDIC Quality Management

a presentation from your Quality Management Committee

By Ben Novak and Tonny Jensen

SLIDE 2

Introduction

Training involves understanding that QM is neither a one-off effort nor an easy fix for areas of concern in a firm. It is the implementation of a quality system and attitude, and needs a state of mind consistent with the principles of wanting to learn and improve on a continuing basis.

The application of a firm's resources (knowledge and skills) to address a client's stated or implied need, and the "Plan-Do-Check-Act" cycle that encompasses quality assurance and quality control, constitute only part of the process. Quality Management - the involvement of all employees in the continuous improvement process - is an essential ingredients to the development, and delivery of "quality" to the client.

Introduction

- KAIZEN "..the relentless quest for a better way, higher quality and craftsmanship, continuous improvement and the daily pursuit of perfection" KAI (change) + ZEN (good) = improvement
- LEARNING " .. the willingness and the eagerness to find out about things and to embrace change"
- QUALITY " … will flow from a culture including the above two"

SLIDE 3

Quality Management

FIDIC believes that the practice of Quality Management by consulting firms of all sizes is necessary for the industry's continued success and advancement. The basic principles of Deming, Juran, Crosby, and others who advocate quality, elaborate on how a firm should do business if it wishes to achieve a quality orientation. Although these writers emphasise the importance of customer satisfaction as the reason for achieving quality, a number of other reasons also justify the consulting engineering industry's application of QM. They include: the changing business climate; the reputation of the industry; requirements for project work; efficient and effective cost management; and liability and risk management. QM results in cost reductions, as will be shown later.

Buy in, or acceptance of a concerted effort toward implementation of QM, has to be evident and personal from the Chief Executive Officer (CEO) and down. This will be perceived positively by the rest of the organization, and will then receive as much attention as other regularly mentioned priorities

Distinct but not separated from the need for QM are the benefits resulting from its application. Clients require assurance that the service provided will meet their need. Firms should be able to provide this assurance. However, the consequence of a delighted client - more business - is a central benefit responding to the need. Quality means business. The QM process will also have to show measurable results. These will be evident in reduction of risk, errors and costs. Measuring effectiveness presupposes a good accounting system and internal monitoring of project execution. Base conditions for comparison must also be established.

Quality Management

- Long-term view
- Buy-in from the top
- It must ‘mean business’
- Continuous
- Measurable

SLIDE 4

Issues of cost

There are issues of cost of not having a QM system; they present the strongest arguments for the system. But there is also the resistance to incur the perceived additional cost of implementing what may be seen as additional administrative burdens.

The above issues underline that fact that a firm cannot afford NOT to have a system of some sort. The ad-hoc managing of projects and processes is an impediment to growth and delegation. Hidden costs relate to re-work from incomplete instructions, and overruns in cost or schedule, among other items.

A client's negative reactions on services not fulfilling expectations, or stated or implied needs, are costly and may not lead to repeat business.

In a long-term perspective, QM is necessary for a firm's continued success and advancement, because QM focuses primarily on the needs and wishes of clients - the very reasons for our business.

Experience and research have shown that the QM system must be implemented on a continuing basis. In other words it is a living and ongoing process, needing a continuing support structure, whose primary effort is directed toward researching, planning, implementing and then maintaining the QM effort. While this may appear to be a heavy burden for smaller firms (say less than 100 staff), it need not be. One of the senior partners can adopt this role on a part-time but continuing basis. In larger firms, there will usually be dedicated personal in the QM area. In some cases, these resources may be shown under various headings, such as "Risk Management", "Contract Management" or "Quality Management'". The name is less important than the function.

A survey by FIDIC has shown the number of QM staff compared to size of the firm ranged from about one (part time) for firms of 50 to 100 employees - a number that seems to be too high - to about 1 per 200 for larger firms.

Some 70% of the respondents indicated they had full-time staff engaged in QM that were not charged to clients.

Issues of Cost

- Costs of insufficient control
- Hidden costs
- Client reactions
- Long-term effects

SLIDE 5

Vocabulary

Quality Control (QC) is simply the measurement or comparison of a finished product against some set of standards, and the rejection of product not meeting this set of standards. QC does not presuppose a process of QM.
Quality Assurance (QA) refers to program of verification of different acts involved in the completion of a process.
ISO 9001 is an international standard and process for QM, which requires documented steps through a process, feedback of process failure and training through process analysis. There is a set protocol for achieving this. Firms satisfying the protocol can either be “certified” by a qualified third party, or they can express their “compliance”, indicating they follow set steps and processes, but have not yet chosen certification.

Total Quality Management is an integrated process, the objective of which is an ongoing focus on quality and learning through continuous improvement. It can be practised generically, whether it follows a standard set of rules, such as ISO 9001, or some other convention.

KAIZEN, is the Japanese expression covering the continuing learning process, based on the observation that repetitive or similar acts can always be improved upon, to render the objectives more effectively attained.

Vocabulary

- Quality Control
- Quality Assurance
- ISO 9001, compliance, certification
- Total Quality Management
- KAIZEN

SLIDE 6

History of Quality Management

Throughout its history, FIDIC has exercised its mandate in the production of various documents, contract forms, guides and manuals to assist consulting engineers world-wide to perform and deliver services to their clients. These publications have facilitated the business practice of consulting engineers to establish standards, or norms which are used by a large and increasing number of consulting engineers and their clients.

We are also driven by evidence of less-than-perfect human artefacts and products.

There have been some famous failures. One waiting to happen is the Leaning Tower of Pisa, where geotechnical investigations may not have followed best practice.

Another structure which failed spectacularly, is the Tacoma Narrows Bridge.

In ancient times, builders often paid with their lives: absolute rulers simply had the builder of a faulty structure executed.

Egyptian Pharaohs had the “Book of the Dead”, which described methods by which burials should be performed, specifying exact procedures. Was it the first QM Manual?

Another early record of a Quality Standard appears to have been a description of requirements for sea-going vessels in England, and whether the vessels were to be accepted for insurance by Lloyd’s of London.

History of Quality Management

- Examples of failures
- Ancient methods of control
- The start of documented control (Ancient Egypt; British naval vessels)

SLIDE 7

Company culture

We need to understand the business and the culture we are in, when embarking on a QM programme. We should ask some of the following questions, to ascertain commitment:

Is there a clear shared corporate vision which includes quality?

Is there a written mission statement which supports quality?

How will commitment to quality be demonstrated internally and externally?

Are the governing values upon which policy decisions made clearly understood and defined?

Are all staff personnel being made aware of quality policies and objectives ?

Are adequate resources for quality, including management resources available?

Is there an understanding of who all the stakeholders and interested parties are?

Company Culture

- The Business we are in
- The Mission
- Values, Goals and Objectives
- Stakeholders

SLIDE 8

Vision of the firm

The vision of the firm must include many aspects. It is important that the hopes, aspirations and objectives of the many stakeholders, owners, employees, clients, and regulatory bodies, are touched on.

Plans for the firm must also reflect the external environment and the market realities, so that proper quality objectives can be formulated. There are absolute and relative service levels. Depending on the product and engineering discipline, the depth of QM may vary.

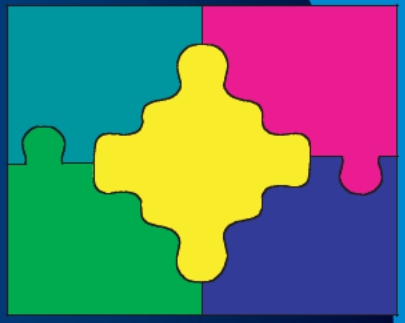
The realities of the market in which the firm operates should also be clearly enunciated. QM systems need to reflect accepted practices, and concentrate on the specific operating details and procedures for projects executed under these conditions.

Growth plans of a firm, either from internal growth, or by merger and acquisition, will be facilitated by a QM system, which defines culture and preferred practices. QM will also reduce project costs and eventually contribute to increase volume, as clients understand the value of dealing with a quality oriented consultant.

Employee aspirations will be enhanced through the removal of uncertainties in operating methods, and the reduction of frustrating changes and re-work, which will create an improved working environment.

Vision of the Firm

- Firm history and view forward
- Aspirations of all the stakeholders
- The realities of the market
- Growth plans, and profitability
- Employee aspirations



SLIDE 9

The customer

A proactive pursuit of customer satisfaction is a critical element. Management and each employee must learn the concept of internal and external customers. Not only is there an ultimate customer - the client - to be satisfied, but along the way as each person passes work to the next, the concept of the "next person as a customer who must be satisfied" must be cultivated. That means finding out what the customer, i.e., next person in line, wants or needs, and delivering the required quality. It is essential to define the "deliverables" in such a way that at every step of the process "the next customer" obtains what is actually expected. Every step in a process must add value. Value is added, if the needs and expectations are met. These may be defined in many ways. Basically what this is about, is to obtain a mutual understanding and acceptance between the buyer and the seller of what constitutes the "deliverables".

The most important judge is, of course, the external (real) customer.

Without the external customer - the client - the consulting firm cannot remain in business. QM adds value to the client. This is why QM focuses primarily on the needs and wishes of the external customer.

The Customer

- Internal customer
- External customer
- What is being sold/transferred
- What constitutes expectations
- Where and how are expectations defined

SLIDE 10

Various QM systems

The hierarchy of directions as they are presently seen, may well be expressed in the cascading order shown on the slide.

All manner of direction, whether from an ISO process or an internal Manual, or system, can be a protocol for quality. We are talking here of degree. Firms may be controlling a small part if their operation, either because of the quality focus of certain individuals, or of the rigours required by legislation (such as the financial accounting satisfying corporate tax conditions).

Best practices always follow when processes are written down and followed: “Say what you do and do what you say”.

Various QM Systems

- ISO 9001
- FIDIC Guides
- Internal Manuals
- Internal Control Systems
- “Say what you do, do what you say”

SLIDE 11

Monitoring

Once processes are documented (i.e., in writing), it is possible to verify how well they are followed. This, simply put, is the basis of an audit, or a certification.

Internal audits can be performed with two objectives. One can see whether the newly introduced systems make a positive contribution to cost reduction, by comparing to agreed pre-system base conditions. Verification of consistent use of the new QM system should also be done, so that improved results have the full benefit of an applied system.

Management review should focus on measurable items, such as redesign incidents, unsatisfactory scope definitions between internal departments, refused extra work orders and the like, as direct indicators of costly occurrences, which when eliminated through a QM system, will show marked increases in profitability.

External audits can be performed when the firm feels ready and a QM system, corresponding to certain set objectives has been introduced. This audit can be performed by duly accredited auditors, such as would be the case if an ISO certifiable system is adopted, or by other professionals, such as peer reviewers, or by clients.

Again the basic philosophy here is that any documentation of process, which is duly adhered to, is likely to have positive effects on the firm as a whole.

Monitoring

Internal

by checking against base conditions

by verifying adherence to the system

External

by third parties, auditing whether "we do what we say"

SLIDE 12

Getting started (1)

The CEO of the firm must demonstrate in a clear and visible way that he or she is personally fully committed to QM. This commitment must be evident to all staff in words and actions.

The business advantage of introducing a QM system has now been established on many levels. Again FIDIC's own survey of firms of all sizes, confirms that over 70% agreed that a QM system enhances a firm's performance. On the reason why firms had adopted a QM system, about half said they did it after internal considerations, and the other half admitted client pressure.

The quest for quality in services is a journey. The most important step is the first one, but ongoing improvements are a product of a series of steps. Each team, each person must continuously examine their work with a view to identifying more effective ways to achieve the desired service, including reducing the time, and resources required and to improve the quality of the service. The adoption of the "Plan-Do-Check-Act" cycle can be beneficial in the process of continuous improvement.

The trend is to see firms admitting that the QM approach has improved the bottom line as well as overall operations. This would be expected, but seeing it confirmed in surveys is an additional business endorsement for QM.

But once adopted, a system and its culture must be maintained, in order to reap the benefits on a continuing basis. It is not like a new coat of paint that can be forgotten.

Getting Started (1)

- Need for top management commitment
- Understand the business advantages
- Take a long term view
- A well planned system will pay for itself
- It is an ongoing job

SLIDE 13

Getting started (2)

Analyse how the firm currently runs its business by identifying all the main processes, and the main steps in each process. Special attention should be given to where things can go wrong. Also identify areas where documentation exists, both procedures or instructions describing the activities and any records kept.

Gaps between what is needed and what is wanted will be identified. How this is corrected will depend on the management style practised in the firm. Centralised management in organizations can initiate the required changes more rapidly than decentralised participatory organizations, but sustainability is more related to management commitment than management style. Resistance to change should be identified as a normal occurrence, and the nature of the change process should be openly discussed. The better people at all levels understand the benefits, the more the enthusiasm will develop.

Identify an individual who will be the focus for implementation, and delegate authority and resources.

Provide training for this person in the quality improvement process through seminars, readings, videos, etc., or external consultant advice. Identify methods to sustain an ongoing interest in QM and to create quality awareness in all staff on a continuing basis.

This could include a presentation package on QM for use in employee meetings.

Getting Started (2)

- Make an inventory
- What is already in place
- How well used
- Appoint a coordinator
- Listen to your coordinator

SLIDE 14

Getting started (3)

Look to FIDIC for help in basic material if there is little in place. Research simple existing manuals and recommended practices, to minimize in-house effort and cost. Use these to create the basic structure of your documentation.

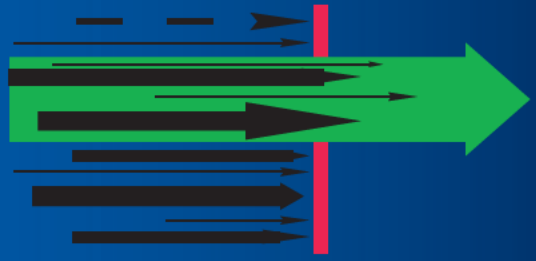
To cover specific issues in your firm, select one problem area of concern to the firm as a pilot study, identify ways to improve quality, and identify ways to measure improvement and get started on a modest implementation project.

The quality team (or individual) initiates the improvement process by describing a number of issues and improvement areas, as identified by an audit of the existing system against the identified requirements, a client and staff survey, and a review of project histories.

Use whatever is initially produced as “course books” to elaborate and teach QM concepts to staff at all levels throughout the organization, and to ensure adoption and use of the ‘improved’ practices on a consistent basis. You have just implemented the rudiments of a system at this stage.

Getting Started (3)

- If there is little in place, look to FIDIC
- FIDIC has many manuals
- Produce minimal material initially
- Manuals will serve as “course books”



SLIDE 15

The training phase

There may be persons within the firm who have learned the fundamentals involved, and have the talent to make presentations to others. They can become the mentors and custodians of the process.

Should such persons not be available, there are professionals from other firms who may be able to perform these initial tasks on a fee basis. It is important that these early efforts start on an enthusiastic footing, with full participation by the firm's CEO.

There will also be changes and improvements in internal operating procedures, as part of the discussions related to the implementation of a QM system. The various department heads and supervisors will have developed these. They will be the "trainers" of their staffs.

A rehearsal with senior management should be held, to ensure that all formal presentations are of the highest calibre, to strengthen senior management commitment and to align with corporate objectives. Senior management may wish to review what will be said in sessions or what will be discussed in seminars.

The Training Phase

- Selection of trainers
- In-house or contract
- Must have interest in QM
- Must infect others with enthusiasm
- Trainers must be familiar with subjects
- Rehearsal with Senior Management

SLIDE 16

Project oriented training

Selling

The true complete cycle of a project really starts with the proposal written to secure a commission. That is the selling part. Often commitments made at that stage will influence the entire project, especially if organizational, schedule and fee commitments are part of that document.

Contract

These commitments will find themselves written into a formal contract - the next phase of a project. Proper project QM will assist the negotiating phase of the contract. You can begin to see why the QM issue can be so positive in relation to potential financial results on a project.

Planning

Project Plan: to describe how the consultant is going to plan the processes for the conduct of product work. The importance of this step cannot be overemphasised.

Execution

Input: to identify what input information is essential for the conduct of the project.
Output: to define the project deliverables.
Review: to confirm that the project efforts to date have produced the expected results.
Verification: to ascertain whether the project results to date meet the project input requirements.

Feedback

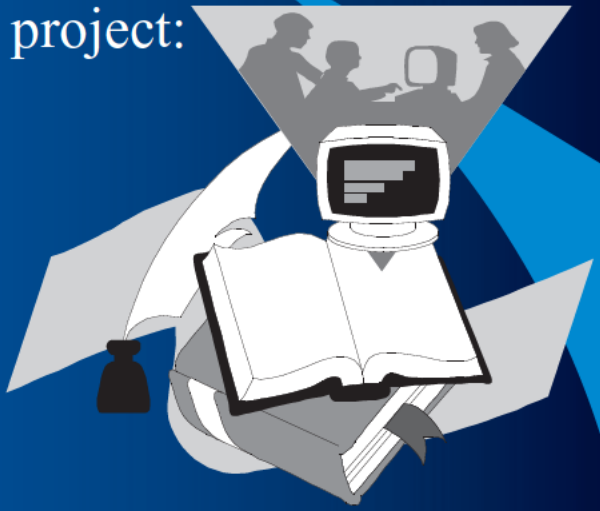
Validation: to ascertain that project results meet the client's expectations.
Changes: to control any changes to the project.

More detailed listings in these contexts are of course available from the various manuals to which this presentation makes reference.

Project Oriented Training

Life cycle of a project:

- Selling
- Contract
- Planning
- Execution
- Feedback



SLIDE 17

Introduction to ISO

ISO from the Greek word “isos”, meaning “equal”, is the root of the prefix ISO. It occurs in a number of other terms, such as isometric, or isonomy. It is valid in the International Organization of Standardization’s three official languages, English, French and Russian.

FIDIC has prepared a guide to the application of the ISO 9001 Standard. Standards as applied to the consulting industry, also published by FIDIC.

There are many QM Systems in existence. The documents focus on the application of the ISO standards as a basic QM system for the consulting engineering industry. Individual consultants can then improve on it as their experience provides. It is not a requirement of the ISO 9001 Standard that a quality system to be certified.

If a consultant wishes to certify his ISO 9001 QM System, then that is a business decision to be made. A firm operating under essentially the type of QM system described in the FIDIC Guide, but not certified and having no fixed plan for being certified, would be considered operating under a “certifiable system”.

In essence each firm has to decide what is right for its size, practice and clients, and organise accordingly. But remember, any manual and organised process, however humble, is better than none for all the reasons we have already covered.

Introduction to ISO

- Based on existing FIDIC material
- Historical aspects
- What is right for your firm
- Any organized QM is better than none
- Customize to your needs

SLIDE 18

Measuring results

Remembering that we are business organizations, the need for visible financial improvement is evident. Thus a good financial reporting system and database is a prerequisite for meaningful monitoring of the effect of QM. There are a number of other non-financial statistics, which will have to be kept, to obtain a better picture of relative improvement.

Measurable items are redesign incidents, unsatisfactory scope definitions between internal departments, refused change orders, budget overruns on projects, and the like. These are direct indicators of poor adherence to procedures. The reduction of these incidents on a relative basis will be a direct indication of successful QM.

It will be important to establish base numbers so that a relevant comparison can be established. It can be noted the examples given all represent extra cost to a firm, against which no fees are available. Their elimination has to result in a better bottom line. Be consistent in these endeavours. And remember .....

Quality means business….

Measuring Results

- Need for good financial information
- Establish base scenario
- Some points to measure
- Be consistent

SLIDE 19

Ways to apply training (1)

Now that we are convinced we should implement a formal QM system, here are some initial steps you can take. If you wish to make the whole matter quite brief - the most suitable in a small-firm environment - the present slide shows a typical agenda and process for initiating QM.

Let’s discuss these items, to see that we all have the same understanding of what is needed.

Ways to apply Training (1)

WITHIN A FIRM

1/2 Day SESSION (essentially familiarization)

* This slide presentation, 60 min.
* Discussion of themes such as:
  the firm's Mission, Objectives, Stakeholders,
  Value of QM, Creating an atmosphere for QM,
  Quality Issues in the Firm 120 min.
* Selection of three items to improve
  Define items, define improvement, decide how to measure success, delegate task 60 min.

…. The first small step in QM ….

SLIDE 20

Ways to apply training (2)

If a Member Association (MA) was to brief its members on a QM subject or system, it might follow the agenda and process outlined in this slide.

The material available from FIDIC is now quite comprehensive, and entirely sufficient for implementation of a QM system.

The sessions can be as concise or as detailed as the potential participants or organisers judge appropriate.

The material used can vary from this brief overview, to the review and discussion of all the material available from FIDIC.

Ways to apply Training (2)

WITHIN A MEMBER ASSOCIATION

* This Presentation
* In-depth discussion of material available from FIDIC
* Discussion of typical course and seminar plans
  - 1/2 day sessions
  - full day sessions
  - two day sessions, and initiation to a full blown QM plan
  - ISO9001 program

SLIDE 21

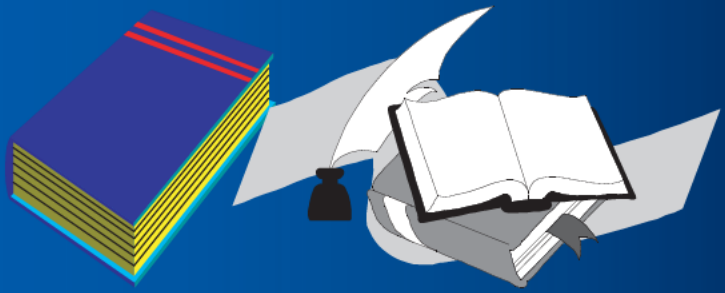
Where to get more information

Here is a partial list of materials available:

1. Roger D. Hart: *Quality Handbook for the Architectural, Engineering*, and Construction Community, American Society for Quality, 1994
2. *Quality in the Constructed Project*, American Society of Civil Engineers, 1988
3. *Quality Assurance for Consulting Engineers*, American Consulting Engineers Council, 1986
4. Philip B. Crosby: *Quality is Free*, McGraw-Hill Book Co., New York, 1979
5. Philip B. Crosby: *Quality Without Tear*s, McGraw-Hill Book Co., New York, 1985
6. J.M. Juran: *Quality Control Handbook*, McGraw-Hill Book Co., New York, 1979
7. H. James Harrington: *The Improvement Process: How America's Leading Companies Improve Quality*, McGraw-Hill Book Co., New York, 1987
8. T.W. Hardjono *et al*: *The European Way to Excellence: How 35 European manufacturing, public and service organizations make use of quality management*, Directorate-General III Industry, European Commission
9. Clive Shearer: *Practical Continuous Improvement for Professional Services*, ASQC Quality Press, Milwaukee, Wisconsin, 1994
10. FIDIC ISO 9001 Interpretive Guide
    Guide to the Interpretation and Application of the ISO 9001:2000 Standard for the Consulting Engineering Industry, FIDIC, 2001
11. *FIDIC Risk Management Manual*, 1st Ed.
12. FIDIC Quality Based Selection (booklet)
    Quality Based Selection for the Procurement of Consulting Services
13. FIDIC maintains a clearing house of information related to Quality Management at http://www.fidic.org/resources/quality

Where to get more information

- Other training sessions
- List books, articles, electronic sources
- Consulting services, other sources



SLIDE 22

Summary

WHAT'S LEFT TO BE SAID: GO TO IT

We have discussed the history of quality control, its universal acceptance as evidenced by historic concepts dating back to ancient Egypt, the last couple of centuries, and to Japan.

We have established that recent surveys have shown general agreement as to the value of QM systems, in the context of present and future operations of engineering consulting businesses.

We have also examined some of the pitfalls, and the bridges to cross when implementing a system.

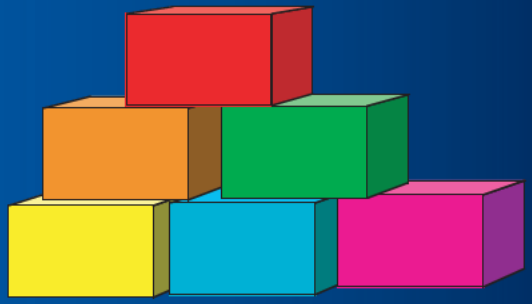
It is hoped that a presentation such as this one will convince management to initiate a formal QM System in their firms.

This package has also put forward some approaches to getting started, and to initiating staff to the concept. The presentation can be used for these purposes.

At this time we invite viewers and readers to give feedback to FIDIC on any subject raised herein, so that we might ourselves make this mission subject to continuous improvement.

Summary

- What has been learned
- Ways to apply training
- Feedback on sessions



SLIDE 23

End of Training Kit

This is the end of the presentation as such. At this time it may be appropriate to enter into a discussion phase, while all the slides are still available, in case references to earlier frames are needed.

Quality Management

End of Training Kit

FIDIC Quality Management Committee

produced by Ben Novak and Tonny Jensen