INTRODUCTION TO QUALITY ASSURANCE and TOTAL QUALITY MANAGEMENT

QUALITY ASSURANCE

♦ Quality is an essential ingredient in building successful businesses and marketing.

♦ Not only do products and services need to be of high quality, but potential customers also need to have assurance that the products will be of high quality.

♦ Organisations that have developed a quality system have found that it is becoming a vital part of their business strategy

WHAT IS QUALITY:
The ability of your product or service to satisfy your customers.

WHAT IS QUALITY ASSURANCE (OR QA):
What you need to do, to demonstrate that your product or service will satisfy your customers.

WHAT IS A QUALITY ASSURANCE SYSTEM:
The organisational structure, the processes and procedures necessary to ensure that the overall intentions and direction of an organisation as regards quality are met and that the quality of the product or service is assured

THE HISTORY OF QUALITY ASSURANCE:

♦ Quality Assurance Systems were first widely introduced during WWII.

♦ There was a need to tighten controls on industry output, particularly in the military industry.

♦ These were initially just inspection and testing, and relied on catching the defects at the end of the process.

♦ As the demand for better quality and more reliable products and services increased, the quality systems evolved to become the ISO 9000 series.

♦ These now rely on PREVENTION RATHER THAN CURE, and are applicable to all industries, including the construction industry.
THE QUALITY ASSURANCE STANDARDS:

♦ In 1987 respected industry representatives from around the globe assisted the International Standards Organisation (ISO) to develop the ISO 9000 series of quality system standards.

♦ These standards have been recognised and are in use in over 90 countries including the United Kingdom, the European Community

♦ The 2 most commonly used standards in the ISO 9000 series are ISO 9001 and ISO 9002:

ISO 9001 sets out the requirements to be met by the Quality System when a business is involved in design, development, production, installation and/or servicing.

ISO 9002 sets out the requirements of the QA system when a business is involved in development, production, installation and/or servicing.

As you can see, the only difference between the 2 standards is the "Design" element.

REASONS FOR SETTING UP A QUALITY SYSTEM:

A well developed and implemented QA system should:

(i) Improve your product and service quality
(ii) Give your customers confidence that their needs will be met.

(iii) Standardise your business by giving it a consistent approach to its operations
(iv) Improve work processes, efficiencies, morale and reduce waste

The driving forces behind the huge popularity of QA Systems are:

(i) Government purchasing policy
(ii) Large businesses purchasing policy
(iii) Other customers are asking for it
(iv) Other competitors are offering it
(v) Standardised procedures are wanted for a growing company
(vi) Marketing tool is wanted.

The benefits that businesses should derive from a properly implemented QA System are:

(i) Improving customer satisfaction
(ii) Improving efficiency
(iii) Improving effectiveness
(iv) Reducing rework and waste
(v) Creating a well-planned business
(vi) Adding credibility to the business
(vii) Enabling the business to compete on an equal basis with larger businesses.
TOTAL QUALITY MANAGEMENT

Total Quality Management: What Is It? The management choice of the nineties is more than a program; it is a commitment to a new way of life, personally, professionally, and as a world citizen. Without that commitment, it becomes another management fad and a waste of time and money.

Total Quality Management (TQM) is the optimisation and integration of all the functions and processes of a business in order to provide for excited customers through a process of continuous improvement.

The 1990's is the decade of Globalisation. In order for companies to be competitive in this environment they have seen the imperative need for Quality. However through the decades leading to the 90's there have been many "gurus" who have explicitly underlined the need for Total Quality Management Systems in companies, but due to many factors these ideas have either gone unheeded, or been buzz word for a short time. It is possible that Total Quality Management (TQM), is once again a buzz word and a marketing tool, but nevertheless it is a tool that is being extensively used in the 90's to help companies gain and maintain a competitive edge over their rivals.

A Disciplined Approach for Management and Employees to Manage Quality
A Methodology for Problem Solving and Continuous Process Improvement
Apply to All Employees in Everything is done
Everyone has a Customer - Both Internal and External
Quality Defined is Conformance to Customer Requirements

Objectives of TQM:
- Process improvement
- Defect prevention
- Priority of effort
- Developing cause-effect relationships
- Measuring system capacity
- Developing improvement checklist and check forms
- Helping teams make better decisions
- Developing operational definitions
- Separating trivial from significant needs
- Observing behaviour changes over a period of time

TQM revolves around:

- Commitment by Senior Management and all employees
- Effective strategy, vision, mission and goals
- Customer/ Supplier relationships
- Communication
- Tools and techniques for improvement
- Team work
- Systems to facilitate improvement
- and most of all TRUST
The quality system should apply to and interact with all activities of the organisation. It begins with the identification of requirements and ends with their satisfaction, at every transaction interface. The quality system must be a practical working document. Look for a document that is well fingered in use. A useful guide in the operation of any process is:

1. No process without data collection
2. No data collection without analysis
3. No analysis without decisions
4. No decisions without actions (which can include doing nothing)

This discipline is built into any good quality system primarily through the audit and review systems. The overriding requirement is that the systems must reflect the established practices of the organisation, improved where necessary to bring them into line with current and future requirements. In implementing a quality system the established national standards such as the BS7850 series can serve as a useful guide and framework.

A systematic, functional, quality model like TQM should be genuinely explored and exploited. Continuous improvements are probably the most powerful concept to guide management through the achievements of TQM. Continuous improvements are based on systematic, incremental and habitual improvements of processes rather than on breakthroughs and innovative advances. The process concentrates on elimination of waste and non-value-added activities through collective and continuous involvement of all employees.

This systematic approach to quality management requires the following components:

Planning the processes and inputs
Providing inputs
Operating the processes
Evaluating the outputs
Examining the performances of the processes
Modifying the processes and their inputs.

**TQM Tools**

Quality Improvement Teams
These are small groups of employees who work on solving specific problems related to quality and productivity, often with stated targets for improvement. Quality improvement teams are proving to be highly successful at tracking down the causes of poor quality as well as taking remedial action.

Benchmarking
This is the process of identifying the best practices and approaches by comparing productivity in specific areas within ones' own company to other organisations both within and outside the industry.
Statistical process control
This is a statistical technique that uses periodic random samples taken during actual production to determine whether acceptable quality levels are being met or whether production should be stopped in order to take remedial action. Because most processes produce some variation, statistical process control uses statistical tests to determine when variations fall outside a narrow range around the acceptable quality level. The emphasis when using SPC is on defect prevention rather than trying to inspect the quality into the product.

COMMITMENT
In order for the Eye on the Future Model to be a success, each member in an organisation must be committed to the change process. It cannot be viewed as the new flavour of the month, but should rather be regarded as an exciting life changing process. Too often peoples' enthusiasm wanes when they realise that the change process in an organisation is not likely to occur overnight. People need to pledge their support to objectively analysing their job functions and procedures, and seeking new innovative ways to improve them. If necessary inspirational speakers should be employed to enthuse staff to a new attitude of commitment. Once again, people are led by example. If it appears that management is not committed to the change process, this is the attitude the people will develop. However, if commitment is perceived to be the attitude of management, then the people are most likely to follow.

TRAINING
Training must be a part of the organisations succession planning. In today's business environment any training which is less than visionary will not help the organisation meet its' future goals and objectives. Training objectives must be supportive of the company's vision and mission. In order to identify training, the employees must be involved. System deficiencies including non-conformance reports, customer complaints and job performance appraisals will highlight the most urgent areas for development. Training programmes must be devised and implemented to help bridge the gap identified previously. The results of the training must be evaluated to ensure that effective improvement has been achieved and that employees are competent to use the skills acquired.
Management must promote the need for continuous training, as it will facilitate the following:

1. Employees will be more confident and motivated in their work
2. Reduce staff turnover
3. Reduce errors
4. Improve productivity
5. Improve the organisation competitiveness.
Training must help each individual in the organisation to maintain a growing knowledge of their business environment. It must be implemented to each individual, from the directors to the cleaners.