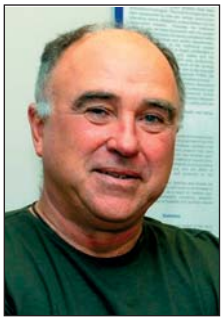
Quality Management and Health and Safety (H&S) management: "*Two sides of the same coin*"



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INTRODUCTION

Notable collapses of buildings and other structures during construction in the South African construction industry over three decades amplify the importance and role of quality management in assuring that the construction process and its activities do not compromise the integrity of buildings and structures, and the H&S of project participants and the public in general.

THE ABSOLUTES OF QUALITY AND THEIR RELEVANCE TO H&S

Crosby (1996) presents the four absolutes of quality, which constitute the basics of quality: definition—conformance to requirements; performance standard—zero defects; system—prevention, and measurement—price (cost) of non-conformance (CONC).

Disturbing terms such as 'low quality materials' used by the Council for the Built Environment (CBE) (2025) in the Media Statement on the Council for the Built Environment investigation into the Multi-Storey Building Collapse in George on 6 May 2024, are a misnomer as materials either conform to requirements (standards / specifications) or do not i.e., there are no 'low', 'medium' or 'high' quality materials.

These absolutes apply unequivocally to H&S. Firstly there are numerous H&S requirements contained in, among others, legislation, regulations, standards, contract documents, and H&S specifications, that need to be conformed with.

Secondly, the obvious performance standard relative to H&S is zero deviations (from requirements). Deviations create the opportunity and / or 'trigger' for 'failures of management' as opposed to 'accidents', the outcome of which is fortuitous, either minor, moderate, major, or catastrophic as in the case of the George building collapse.

Thirdly, the system is certainly prevention as opposed to appraisal or inspection. Although brick-work can be demolished and re-built (at a cost) if defective, once an arm is severed, it is severed!

Fourthly, in terms of measurement, the cost of accidents (COA) is ideal, as all stakeholders can relate thereto and it can be expressed as a percentage of the cost or value of a project, or the value of completed construction in an organisation or industry.

QUALITY MANAGEMENT IS A MULTI-STAKE-HOLDER MULTI-STAGE ISSUE

If a suspended reinforced concrete slab, support work, wall, or trench excavation collapses, then it is invariably a quality management issue, which have implications for H&S.

Furthermore, a range of stakeholders influence quality over the six stages of projects, among others: clients and construction project managers (CPMs)—multi-stakeholder project quality plans, adequate project duration, appropriate procurement system, pre-qualification in terms of quality (designers and contractors), quality as a bid criterion, and project quality oversight; designers—design of the permanent works, constructability, 'design and construction' method statements, and ensuring of conformance to requirements; quantity surveyors (QSs)—facilitation of financial provision for quality-related interventions, and quality as a bid criterion, and contractors—quality management systems (QMSs), safe operating procedures (SOPs), safe work procedures (SWPs), and conformance to requirements.

CHALLENGES

The following, among others, militate against quality: a general poor industry quality culture; the focus of registration relative to projects when businesses / practices undertake projects and influence the achievement of quality thereon; separation of design and construction relative to constructability, H&S, and quality; fragmentation of design; compressed project schedules; competitive tendering resulting in the appointment of the 'lowest bid' contractor accompanied by the general focus on cost and time; no 'barriers to entry' by contractors and workers; de-skilling of the trades; inadequate management commitment to quality; a general informal approach to quality, and limited documenting of defects and measurement of CONC / rework.

REQUIRED INTERVENTIONS

The integration of management systems and approaches relative to the environment, H&S, and quality.

Quality-related criteria such as QMSs and / or quality management practices must be included in the Construction Industry Development Board (CIDB) and the National Home Builders Registration Council (NHBRC) contractor registration processes, and employer associations' e.g., Master Builders Associations (MBAs) and South African Forum of Civil Engineering Contractors (SAFCEC), membership application processes.

The six statutory built environment councils must review their respective 'Scope of Work for Categories of Registration' to ensure that they

reflect 'better practice' quality management, and reality. The Professional Building Inspector, and Certified Building Inspector registration categories require special attention in terms of H&S and quality.

The role of Building Control Officers (BCOs) must be reviewed to ensure that BCOs interrogate H&S and quality-related issues such as geotechnical reports, 'designing for construction H&S', and structural design processes, including peer review of structural designs.

All tertiary built environment education must address quality management, and statutory council and professional association accreditation panels must interrogate the extent to which it is embedded (not addressed) in such programmes.

Mandatory formal skills training of substance must be reinstated as workers must be empowered to 'do work right, first time, every time', while working in a healthy and safe manner and environment.

An independent CPM must be appointed to manage projects from Stage 1 'project initiation and briefing' to Stage 6 'project close out' to avoid designers fulfilling a design function and acting as principal agent, which represents a conflict of interest. Furthermore, CPMs must be competent to interrogate structural designs, and construction structure-related processes.

Clients must pre-qualify, prior to appointment, CPMs, construction H&S Agents (CHSAs), designers, and QSs in terms of 'designing for construction quality' competencies, systems, and processes, and quality management competencies, systems, and processes.

Structural design processes must be undertaken in accordance with a rigorous documented quality management process hallmarked by peer review. Design outcomes must be interrogated in terms of, among others, designing for construction quality, constructability, and H&S.

Clients must pre-qualify contractors in terms of QMSs and quality practices relative to both private and public sector projects. Furthermore, general contractors must appoint construction managers that are competent to interrogate structural designs, and construction structure-related processes i.e., able to 'spot the mistake'!

Digitalisation of construction has the potential to contribute to improving, among others, quality performance on projects, which will require commitment, funding, and training. However, it is not the panacea, for failure to 'get the basics right'.

CONCLUSIONS

Although the focus of this article is quality management, and that, among others, quality management is a pre-requisite for optimum construction H&S; quality management and H&S management are 'two sides of the same coin'.

Construction quality is a multi-stakeholder multi-stage issue, which requires an integrated effort managed by a single-point responsible 'conductor' who must be well versed in terms of, among others, quality management, and H&S management. To this end, CPMs are the ideal stakeholder as a designer fulfilling a design function and acting as principal agent represents a conflict of interest.

There is a disconnect between quality and H&S in South African construction, which militates against the achievement of optimum H&S, which manifests itself in, among others, project stakeholders not identifying inadequate structural design, and digesting the implications of 'cracks'.

The general construction environment, structure of the industry, no barriers to entry, pseudo registration of contractors, general limited or non-inclusion of quality management in tertiary education, and as a criterion for registration or membership, and appointment to undertake projects, individually and collectively, militate against construction H&S and quality.

ISO 9000 series certification is the optimum, however, in general, the development and maintenance of a documented QMS is challenging, and in the case of small and medium-sized general contractors, subcontractors, and micro contractors, 'not feasible'. However, among others, pre-activity 'quality talks', and quality checklists are non-negotiable interventions.

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