IMPROVING CONSTRUCTION SAFETY THROUGH PARTNERING
AS A PROJECT DELIVERY SYSTEM

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Abstract

The use of an appropriate procurement system can result in a successful project for the client in respect of the project parameters of time, cost, quality, utility and safety. It would be inappropriate, and questionable, to claim this "success" if it has been achieved at the cost of human life and suffering as a consequence of accidents on the construction site. The project delivery (procurement) system is also the mechanism through which responsibilities and liabilities for different aspects of the complete building are divided between the parties involved. The procurement system must, therefore, be efficient and facilitate client participation. The greater the level of client participation, the more successful the selection of appropriate procurement systems, and subsequently the greater the level of client satisfaction with the completed facility. In this paper, we advocate that a partnering approach incorporating all the project stakeholders, will improve safety performance, complement Total Quality Management and the construction process, and reduce the prospect of long, expensive and drawn out litigation claims in which there really are no winners except the legal fraternity.

Keywords: Procurement system, partnering, project parameters, worker safety

Introduction:

Clients of building projects initiate the entire construction process and require their objectives to be satisfied upon completion of the project (Haupt 1998). The use of an appropriate procurement system can result in a successful project for the client in respect of the traditional project parameters of completion within the scheduled time, within budget and to the required quality standards. It would be inappropriate, and questionable, to claim this "success" if, despite the project satisfying these parameters, it has been achieved at the cost of human life and suffering as a consequence of accidents on the construction site. This scenario is often the case. For a project to be truly successful, it should additionally be completed without accidents, injuries and fatalities (Hinze 1997).

Significance of appropriate procurement systems

By adopting a particular procurement route for a project, the client establishes the roles and relationships among the individuals and organisations that make up the project organisation (Atkin and Pothecary 1994). Appropriate procurement systems facilitate a balance between achieving the
project parameters and the allocation of risks (Rwelamila and Smallwood 1999). It is also the mechanism through which responsibilities and liabilities for different aspects of the complete building are divided between the parties involved. It is therefore imperative that the procurement system is efficient and the clients participate fully. The greater the level of client participation, the more successful the selection of appropriate procurement systems, and subsequently the greater the level of client satisfaction with the completed facility (Haupt 1998).

The traditional procurement system restricts client involvement in the construction process, and builder involvement in the design process. Construction professionals operating in terms of this system have been prone to adopting over-simplistic and paternalistic views of their clients. The briefing process, which is an important component in the procurement process, enables construction professionals to understand the requirements of their clients (Green 1996). Where their clients are not sufficiently skilled in communicating these requirements effectively, it is expected of construction professionals to consult extensively with them in order to draft briefs which are unambiguous, complete, flexible and realistic (Sawczuk, B 1996).

From this discussion, it would therefore seem, prima facie, that this system of procurement would become increasingly unsuitable considering

− the considerable influence which clients have on construction safety (Sikes, Coble and Qu 1998, Hinze 1997, Levitt and Samelson 1993);
− the international interest in the teambuilding approach to construction management and construction worker safety (Smallwood and Haupt, 1998); and

Since designers, architects and particularly clients influence the construction process, they can make a great contribution to the avoidance of accidents, if that influence were used with accident prevention in mind from project inception through project execution and then throughout the life of the facility until its demise with the demolition phase. The monumental task facing the construction industry, however, is to indoctrinate every person involved in the design, management and execution of construction projects to give priority to safety and health issues. Until now they have failed to attract the necessary attention, especially from clients and designers (Joyce 1995). To achieve the contribution which they can make, procurement systems must be selected which optimise on their influence and facilitate their participation.

The exclusion of health and safety from specifications, and health and safety being the sole responsibility of building contractors have been identified as primary causes of accidents in construction (Ngowi and Rwelamila 1997). Procurement systems must therefore make provision for the inclusion of health and safety and the redistribution of the responsibility for worker safety to include all the participants in the construction process.

**Procurement and construction safety**

Procurement systems have the potential to play a pivotal role in building the relationships between construction process participants in the effort to reduce accidents, injuries and fatalities on construction sites. According to Dreger (1996) the form of construction delivery affects contractual...
relationships and the development of mutual goals. Within the context of health and safety and sustainability, contract forms, which establish one entity to provide both design and construction, have the greatest potential for success as they create common project goals. However, procurement systems are generally such that building contractors frequently find themselves in the iniquitous position, that should they make the requisite allowances for health and safety, they run the risk of losing a tender or negotiations to a less committed competitor (Smallwood, 1996).

Given that references are made to health and safety in standard contract documentation, these are vague, hardly coercive, and allow contractors to continue to address health and safety to varying degrees. Contract documentation and procurement procedures need to become more conducive to creating the enabling environment necessary for the sharing the responsibility for worker safety among all the stakeholders and players in the construction process from project inception through to final project completion and beyond.

While, generally, pre-qualification is applied to contractors, it should be broadened. The other participants in construction must be included as well, especially with regard to their worker safety performance whether it be, for example, in respect of design, construction method, material specification and supply, financial provision for safety programmes, training and education, and physical construction task execution.

A major consideration is that of determining the project duration which, if too compressed, invariably results in an increase in

- the number of workers;
- the number of hours worked per worker;
- a combination of the number of workers and the number of hours worked per worker;
- the amount of plant and equipment; and
- the number of subcontractors simultaneously undertaking work per period of time.

This intensification increases the likelihood of accidents.

Involving all stakeholders who are aware of these consequences, will contribute to arriving at project duration periods which are conducive to the construction worker safety effort.

Currently procurement systems are not complementary to the construction health and safety effort. The implementation of reforms with respect to procurement practices is not an option. It is a necessity! Delivery models, which foster unity of design and construction, hold the promise of improved health and safety performance. These models include Design-Build, Design-Build-Operate-Transfer (BOT), Design-Build-Own-Operate-Transfer and Partnering (Smallwood and Haupt 1998). Data from 325 recently completed projects in the United Kingdom, showed that design-build type projects resulted in:

- a 12% improvement in construction speed;
- a 30% improvement in project delivery speed;
- a 50% more certainty in completion on time;
- a greater chance of completion within 5% of budget; and
- a higher possibility of achieving specified quality (Sanvido, Konchar and Moore 1997)
Partnering as procurement approach

Sadly, the construction industry is no longer renowned for its construction quality as it is for its confrontation, claims and litigation. Partnering is a concept, which focuses on returning to the basic values of honour, integrity and pride in workmanship. It is about getting along with the people you work with, and it is about getting the job done in an honourable, dignified, efficient, and profitable way (McIntyre 1995). We might add without human suffering and death.

Partnering has been defined as:

".... A long-term commitment between two or more organisations for the purpose of achieving specific business objectives by maximising the effectiveness of each participant's resources. This requires changing traditional relationships to a shared culture without regard to organisational boundaries. The relationship is based on trust, dedication to common goals, and an understanding of each other's individual expectations and values." (CII 1991)

Partnering has also been described as being a relationship where:

"All seek win-win solutions, value is placed on long-term relationships, trust and openness are norms, an environment for profit exists, all are encouraged to openly address any problem, all understand that neither benefits from exploitation of the other, innovation is encouraged and each partner is aware of the other's needs, concerns, objectives, and is interested in helping their partner achieve such." (Cook and Hatcher 1990)

Partnering takes cognisance of the fact that construction projects are a compilation of many processes and the efforts of numerous “customers” and “suppliers.” Further, it recognises that construction projects involve many stakeholders who have a vested interest in the successful completion of those projects. Partnering attempts to develop relationships among the parties or stakeholders through a mutually developed, formal strategy of commitment and communication. It brings together the various stakeholders involved in a project – the client, designers, the general contractor and sub-contractors – to develop mutually acceptable goals for a project (Levitt and Samelson, 1993). "Zero accidents, injuries and fatalities” is the most logical goal to commit to. This single goal will arguably unite all the participants in the construction process, and ensure that individual and group goals completely overlap and become one and the same goals (Smallwood and Haupt 1998).

Traditionally, however, there are considerable inequalities which bedevil the relationships between the stakeholders in the construction process, such as access to the client, access to information, ability to understand risk, and position to negotiate fees (Roberts 1997). However, to achieve the common goal of completing the construction project within the project parameters of time, cost, quality and safety, without the added burden of long and expensive claims among the contracting parties, these inequalities must of necessity be overlooked.

According to Levitt and Samelson (1993), there are at least two reasons for expecting partnering to reduce accidents. These are

- the improvement in all-round relations on the job, which in turn according to research, results in reduced accidents; and
− the performance objectives contained in the partnering charter, which usually includes specific reference to safety and health. ‘Zero accidents zero incidents on construction sites’ could well be such a performance objective.

Additional reasons include:

− reduction of claims;
− more careful monitoring of project performance;
− integration of lessons learned from similar project types; and
− improvement of project planning and scope development at the inception of projects (Retherford 1997).

Each stakeholder has a role in the construction process of any given project. Fundamental to the success of any effort to improve safety and health performance on construction sites, is the commitment of all stakeholders to safety for their own workers as well as those who will come into contact with the hazards presented by the work (De Woody 1998).

During the process of preparing the partnering charter, the organisational goals of all stakeholders are compared with those of the other project team members to identify measurable common goals. Safety performance objectives could include reduced accident rates, audited results, improved incident reporting, appropriate safety training programmes, compulsory induction and orientation courses, registration of safety staff and effective worker feedback (Rowlinson and Matthews 1999). The project goals would almost inevitably include the other universally acceptable project parameters of completion on time, within budgeted cost, to required quality specifications, and predetermined utility. The partnering team can and should be committed to working towards the realisation of these common goals.

However, one of the key elements of any successful partnering arrangement is the creation of a “high-trust” culture (Warne 1993) which is characterised by the lack of the deceit, distrust, innuendo's and hidden agendas which are typical of the traditional construction process. Partnering teams concentrate all their energies to the development of a more productive and open relationship of honesty, trust and synergy (Warne 1993). It attempts to create an environment where trust and teamwork prevent disputes, while fostering a co-operative bond to the benefit of all, in order to facilitate a successful project. Team members are encouraged to come forward, and share in the resolution of problems, while accepting the mistakes and errors of others, in an effort to finding solutions mutually acceptable to all the team members. Synergy, which is the working together of individuals and the expending of their energies in a team effort rather than their many individual efforts, is a natural outcome of partnering, contributing to the overall success of the project as a whole.

The key elements of partnering as applied to the safety improvement effort should, therefore, be:

- Commitment by all stakeholders or team members;
- Equity in relationships between team members;
- Trust as the team members develop relationships of understanding and communication leading to a synergistic relationship;
- Development of mutual goals and objectives, which in this case would include zero accidents and zero incidents on construction projects with which they are involved;
• Implementation on a project-by-project basis;
• Continuous evaluation as part of the Total Safety Culture effort; and
• Timely responsiveness in respect of communication and decision making (McIntyre 1995).

The Construction Industry Institute (CII) in the USA reported that 196 projects using long-term partnering saved an average 15% of total installed cost. With respect to project-specific partnering an average of 7% savings was recorded on 5 very large projects. The CII maintains that partnering offers the most impressive savings in terms of health and safety, constructability and Total Quality Management (McGeorge and Palmer, 1997).

The potential of the partnering process, and other such new and innovative contracting arrangements, must be harnessed and included in the effort of achieving zero accidents and zero incidents on construction sites around the world. A visible and tangible benefit of partnering is a good or improved safety record (McIntyre 1995).

Conclusion

Craftsmen work most effectively when they use the right tools for the job at hand. There are many "tools" available for achieving improved construction worker safety performance. The problem is the selection of the correct one.

We have suggested that the selection of an appropriate building procurement system has the potential to play a pivotal role in building the relationships between construction process participants in the effort to reduce accidents, injuries and fatalities on construction sites. The form of construction delivery affects contractual relationships and the development of mutual goals, which include "zero accidents and zero incidents on construction sites."

Ultimately, a partnering approach incorporating all the project stakeholders, will improve safety performance, complement Total Quality Management and the construction process, and reduce the prospect of long, expensive and drawn out litigation claims in which there really are no winners except the legal fraternity.

Where it has been applied with commitment, partnering has been said to achieve:

• A two-thirds reduction in the correspondence aimed at creating or defending contractual claims;
• Completion on time;
• Reductions in cost growth by 80%-100%;
• Savings of millions of dollars through value engineering; and
• Completion without outstanding claims or litigation (Quick 1994).

The procedure has the potential to:

• Produce budgetary certainty;
• Prevent disputes and litigation;
• Prevent overruns in cost and time;
• Produce savings in cost; and
• Client satisfaction in terms of the project parameters of time, cost, quality, utility and worker safety (Quick 1994, Molenaar, Songer and Barash 1997).
Finally, it is imperative that every available strategy is harnessed in the construction safety effort - and partnering presents such an opportunity!

References

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