THE VALUE OF HEALTH AND SAFETY IN CONSTRUCTION

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The construction industry's attitude towards health and safety has been indifferent, investment of resources being seen as paying little returns. Increasing economic pressures that manifest themselves in tighter margins and greater time constraints on construction projects have compounded this attitude. Within this context, this paper discusses the concept of value in relation to the health and safety performance of the construction industry. Considerations of value have hitherto been restricted to project variables that contribute to the functional performance of buildings. The paper concludes that the industry is sceptical about the benefits of a safe working environment. It also argues that attitudinal and behavioural factors affecting safety during the early stages of design appear to be of major importance to health and safety performance.

Keywords: Health and safety, value, attitudes, culture, behaviour, design, ethics

INTRODUCTION

The construction industry is characterised by; a hostile and uncontrollable production environment; a complex product; a fragmented structure and increasing economic constraints. It is not surprising that the construction industry has more accidents of greater severity than any other industrial sector in the UK (Gyi *et al* 1996). European statistics are similar, with the construction sector employing less than ten per cent of the working population but accounting for fifteen per cent of all accidents at work and thirty per cent of all fatal accidents (Bishop 1993). Although international comparisons are difficult due to differing legislation, definitions and reporting systems, the construction industry's safety record is also depressing in many other countries (Kisner and Fosbroke 1994, Lingard and Rowlinson 1994, Mattila *et al* 1994, Martin *et al* 1996). It appears that the problem of health and safety is a global one.

While there is some evidence of an improvement in health and safety statistics relating to fatal accidents (Anderson 1996), it should be taken in the context of an eleven per cent reduction in the number of people working in the construction industry (Nabarrow Nathanson 1997). There is therefore no justification for complacency and the aim of this paper is to investigate the attitudinal, behavioural, economic and ethical reasons underlying the construction industry's relatively poor safety record.

SAFETY ATTITUDES AND THE CONCEPT OF VALUE

Despite its poor record, the construction industry's attitude towards health and safety appears to be indifferent. Managers display complacency and a lack of concern for the safety of their workforce which is perpetuated by the industry's masculine values and

Mackenzie, J and Loosemore, M (1997) The value of health and safety in construction. *In:* Stephenson, P (Ed.), *13th Annual ARCOM Conference*, 15-17 September 1997, King's College, Cambridge. Association of Researchers in Construction Management, Vol. 1, 353-62.

macho image (Everly 1977, Eves 1989, Bergman 1990). This attitude extends beyond an individual's personal sense of safety, to their treatment of others. For example, in a survey of over one hundred companies, Nabarrow Nathanson (1997) found that sixty per cent of the respondents did not consider the risks to the general public arising from their activities. It was also found that forty per cent of firms failed to carry out risk assessments on the activities of independent sub-contractors. Similarly, while seventy five percent produced written emergency procedures, very few communicated them to sub-contractors, visitors or the public. This recklessness is likely to be, in part, a product of client failures to identify health and safety issues as a priority. For example, in the lists of client requirements produced by NEDO (1975), Bennett and Flanagan (1983), Hewitt (1985), Masterman (1994), health and safety does not feature once, the focus being exclusively upon cost, time, quality, functional and aesthetic criteria.

Surprisingly, despite a growing legal awareness of health and safety responsibilities, Grey's (1996) report, which focused wholly upon value for money, only mentioned the issue of health and safety once. It is particularly surprising in light of the HSE (1993) report which found that accidents on construction sites might account for up to eight and a half per cent of tender prices. Although this figure has not been qualified, it appears that greater attention to health and safety issues has the potential to contribute significantly to securing greater value for money from the construction industry. However, it is apparent that the predominant attitude within the construction industry towards health and safety continues to be a cavalier one. Decisions in relation to health and safety provisions are not based upon ethical considerations about people's basic rights to health and safety at work, but upon economics. This attitude towards decision making which is centred around the concept of value, was noted by Moore (1991) who argued that social requirements including health and safety, maximum working hours, pensions and working conditions are being dictated by the market place. In terms of management attitudes, organisational decisions are too often based on the view that expenditure on safety provisions reduce profits and undermine a firm's efficiency. As Hunter (1997: 6) recalls "we are constantly faced with the economic argument, in other words, safety provisions are is said to cost money without producing tangible results". Whittington *et al* (1992: V) also recognised the economics driving health and safety decision making and cited other problematic constraints such as time pressures and the short-term nature of contracting relationships. They argued that these restrictions adversely affected safety performance by;

- Diffusing responsibility for the co-ordination and control of critical safety issues.
- Making it more difficult to establish a system in which contractors are held accountable for poor safety performance.
- Reducing the quality and quantity of on-site supervision.
- Increasing the difficulty of maintaining safety standards within one site and across different projects.
- Reducing the industry's infrastructure, in particular the provision of training.
- Reducing the likelihood, that safety and risk management will be dealt with systematically and at an early stage in the project life cycle.

Whittington *et al* summarised, "A number of fundamental flaws were identified in the way that both the industry and potential clients are currently responding to these demands. Unless project management is driven by a client with a high safety profile, decisions on organisation, planning and subcontracting of work were found to be primarily based on meeting commercial goals. This is not to say that safety issues are ignored but they tend to be dealt with late in the project life cycle and have little impact on early and often critical decision making. There was also undue emphasis on the failure of individual workers. This results in a reliance on short term solutions rather on any attempt to uncover more fundamental management and organisational problems".

THE COMMON PERCEPTION

The problem is that the predominant economic values sideline ethical considerations from having any part to play in decisions affecting health and safety issues. Ethics are concerned with making principle-based choices between competing alternatives. These principles are ideas of behaviour that are commonly acceptable to society, which prevents us from relying on intuition or personal preference (Kallman and Grillo 1996).

From an economic view point and ignoring the utilitarian and altruistic aspect of industrial development, few would debate that in a construction environment absolute safety is a utopian ideal. Irrespective of the precautions taken or finance expended, no project can be totally free of risk. Historically there has never been any commercial inducement to invest resources into safety management. Unlike insurance which although produces no tangible result does, under the terms of the policy, guarantee payment in case of an accident. Expenditure on safety in all its forms i.e. systems, management, training and protective equipment does not guarantee safety, although it is accepted that it can reduce the likelihood and severity. Similarly unlike quality, which is a marketable attribute, there is no obvious positive inducement to give safety a high priority in business planning. Firms who have a high safety profile are not necessarily placed in any obvious commercial advantage (Preece and Male 1997).

If it is accepted that the construction industry is a potentially dangerous arena and that expenditure on safety precautions does not promise a risk free environment or provide any commercial advantage, there is little incentive to establish safe working practices. While ill health costs industry an estimated twelve billion pounds per year (CBI 1997), much of these costs are indirect and therefore not obviously accountable which makes cost benefit analysis difficult (Moore 1991). Although statutory instruments require risks to be as low as reasonably practicable (ALARP) and failure to do so can result in server fines and charges of manslaughter to both corporate bodies and their officers. In the last five years out of forty-two cases brought forward only three directors has been convicted and the average fine imposed for breach of duty is three thousand pounds (Jarvis 1997). It therefore seems that management is prepared to risk the penalties in order to economise on its budgets.

In summary ethical principles in relation to a safe working environment are being dislodged in favour of increased efficiency and minimised costs, which are seen as justifiable in light of economic pressures on industry. Similar views are reflected in a discussion paper from the Institute of Directors (1996) which has described health and safety as a "prosaic rather boring subject", a burden to business that has been implemented by an "over zealous inspectorate". These attitudes are of grave concern

as the directorate represent the senior management within British industry. This prejudice can percolate through an organisation and help create an erroneous culture which is unsympathetic to the needs and protection of the worker.

ERRONEOUS ASSUMPTIONS WHICH UNDERPIN HEALTH AND SAFETY ATTITUDES

Many of the erroneous assumptions, which are used as an excuse to avoid the issue of quality (Crosby 1979), are reflected in the health and safety literature.

The first is that safety standards are subjective, that they mean different things to different people and that its intangible nature makes it difficult to measure (Hogh 1987). Perhaps it is a consequence of this assumption that a reliable and widely acceptable measure of safety performance has never been developed. Current measures are uncoordinated and rely upon a range of different proactive and reactive data including safety auditing, attitudinal measures, accidents statistics, near misses reporting and the financial cost of accidents (Budworth 1996).

A second assumption is that all accidents take place on site and are therefore a result of workforce error (Shimmin *et al* 1981, Salminen 1995, Falconer and Hoel 1996). This perception has been compounded by the rapid growth in sub-contracting and the self-employed which has in turn, led to a situation where responsibility for health and safety is difficult to identify (HSE 1994). However, an analysis of fatal accidents by Bishop (1993) has shown that thirty five per cent of all accidents have their root cause in design, with a further twenty eight per cent being attributable to managerial decisions. Bennett *et al* (1994) have pointed to a lack of understanding of how decisions made in design influence other aspects of the construction process. Accepting that approximately eighty per cent of the costs of a building are committed by sketch design stage then it may be that a similarly large proportion of “designed in” accidents are in place by this stage (Brandon 1978, Ferry and Brandon 1991).

The third assumption is that health and safety legislation is overly onerous and burdensome for employers (IoD 1996). However, while the HSE (1994) and CBI (1990), accept that the laws relating to health and safety are seen as voluminous, complicated and fragmented. They do not support the overall assertion that they are unduly burdensome. This assertion has been qualified by Jarvis (1997: 5) who found differences in opinion as to how it should be enforced. “Small firms encourage a more prescriptive approach; they want to be told what to do. While larger firms prefer deregulation which they perceive increases flexibility and efficiency.”

The forth assumption is that safety is the sole responsibility of the safety officer/department (Waring 1992 ,Whittington *et al* 1992). It is an assumption that is reinforced by health and safety officers who have a tendency to over centralise their health and safety responsibilities (Deacon 1994). In essence, there is a general lack of collective responsibility for health and safety within the construction industry. If Heinrich’s (1980) assertion that most accidents are caused through a chain of events across a spectrum of organisational levels is true, then this attitude is a dangerous one.

CULTURE AND HEALTH AND SAFETY RESEARCH

Thus, it seems that the economic, macho, adversarial and selfish values that guide managerial decision making in the construction industry lie at the heart of its poor

safety record. It follows that a change in health and safety performance would require a change in managerial values and culture within the construction industry.

Seymour and Rooke (1995) point out that the research community's values reflect those of the construction industry and in this sense, it is not surprising that health and safety research has been neglected in favour of more economically orientated research. With some notable exceptions (Sawacha 1993, Duff *et al* 1993, Whittington *et al* 1992), what attention has been given to health and safety has been generally restricted to the exploration of causal relationships between organisational characteristics and health and safety performance (Jaselskis *et al* 1996, Niskanen and Lauttalammi 1989, Hinz and Roboud 1988). Notwithstanding the difficulties in developing reliable performance measures, such an emphasis may have been justifiable in the early stages of health and safety research. However, having built a basic understanding of influences upon health and safety performance, it is important to investigate the underlying attitudinal and behavioural issues affecting heath and safety performance in the early stages of construction.

COMMUNICATION AND BEHAVIOUR

In addition to the attitudinal and value problems of the construction industry being a contributor to poor health and safety performance, it is likely that communication problems are a contributing factor. These have been well documented and appear to be an inherent characteristic of the construction industry (Crichton 1966, Crawshaw 1976 and NEDO 1983). More recently, Loosemore (1996) identified communication as essential to; the detection and communication of potential problems; the process of defining potential problems; the provision of information to arrive at solutions; the implementation of solutions and the provision of feedback. In essence, Loosemore found that the structure of communication between project participants influences the extent to which a simple problem escalates into a crisis and an organisation's ability to mitigate its impact upon project goals. It is reasonable to assume that the efficiency and structure of communications between those responsible for health and safety decisions would be a factor influencing performance.

Loosemore (1996) also found that construction project organisations are characterised by an environment that is not conducive to the reporting of problems, a characteristic supported by the HSE (1996) who found that accidents are under-reported by over sixty percent. He pointed to a number of psychological mechanisms that caused people to display behaviour which contributed to the escalation of a problem into a crisis. Once again, it is reasonable to assume that due to the sensitivity of the health and safety issue and the negative value attitude towards it, that similar forces may contribute to the poor health and safety performance of the construction industry.

DESIGN IN HEALTH AND SAFETY

The historical emphasis upon the construction stage and important influence of design decisions upon health and safety performance, justify a focus upon the design process. Design entails the combination and balance of ideas generated by the design team, in a way which should reflect the needs of the clients brief. Much design involves the use of basic components and materials in new and different ways within the constraints of the planning and standardised tolerances. There is no underlying single method or system used in the creation of a design, most design strategies are re-iterative and consist of generation of several potential solutions or hypotheses, which are evaluated,

refined and combined until an acceptable solution is created (Gray *et al* 1993). It is a complex process which involves a large number of culturally, technically and geographically diverse but interdependent specialists making their contributions at different times. As a result of the various parties involved in the design process a design is generated and evolves in reaction to change and differing problems that may be encountered. Gidado and Baxter (1996) identified a number of examples including; clarity of clients brief, financial constraints, resource availability, multi-functional end users, necessary changes to the design and the involvement of specialist contractors. Within this environment of evolution and change, health and safety can often become of secondary importance to the more immediately demanding requirements.

CONCLUSION

This paper has discussed the concept of value in relation to the health and safety performance of the construction industry. It has shown that the industry is sceptical of the benefits that health and safety can achieve, because of its underlying value structure. The paper also identified the lack of research into the underlying attitudinal and behavioural issues affecting safety during the early stages of design, which appears to be of major importance to health and safety performance. Finally the paper has also pointed out the psychological mechanisms in organisations which reduce receptivity to health and safety issues and efficiency and structure in determining health and safety.

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