

# An investigation of approaches to worker engagement

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# An investigation of approaches to worker engagement

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The following report was prepared by Glasgow Caledonian University, School of the Built and Natural Environment for the Health and Safety Executive (HSE) and describes a study of approaches to worker engagement in the construction industry. The study involved an extensive literature review of methods used to engage construction workers in relation to the management of health and safety on site, followed by industry consultation via workshops before developing four packages of intervention strategies to test on several sites. Before and after measures of worker perceptions combined with qualitative interviews found that three approaches successfully improve workers perceptions of worker engagement and the health and safety performance of management. Informal methods of engagement were more successful than written approaches and investment in formal health and safety training resulted in more meaningful discussions. Further research is required in relation to developing tools to measure worker engagement and the impact of foreign language speaking workers.

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# EXECUTIVE SUMMARY

## **Introduction**

Management are required to collaborate with the workforce for the improvement of Occupational Health and Safety (OHS) on both legal and ethical grounds. However, these are not the only reasons for such activities. Interaction can lead to improvements in knowledge distribution and acquisition throughout any organisation or project team. Feedback from workers can also be used to check management performance, increase productivity, efficiency and motivation levels as well as lower workforce turnover.

The construction industry has a poor health and safety performance record compared to other industries. In contrast, techniques and approaches, used with success elsewhere, to involve workers in the management of OHS have failed in construction. The problem of interest for this study was, therefore, whether approaches to worker engagement can be developed for the construction industry that will secure improved performance in a cost effective manner. The objectives for the study were to: define and develop approaches to worker engagement appropriate for construction; evaluate these approaches; test their effectiveness on real projects; determine their impact on OHS performance and worker perceptions; and assess the impact of management structure and processes on the viability of these approaches.

## **Worker Engagement**

Consultation is defined by the Health and Safety Executive (HSE) as management giving information to employees as well as listening to and taking account of what they say before making health and safety decisions. Participation or involvement relates specifically to the level of worker involvement in making decisions from zero to full. Therefore, participation or involvement can be defined as the measure of worker influence. Finally, worker engagement is where all workers, not just employees, have the opportunity to influence both management and other workers' decisions. Most construction sites are multiemployer where this coordination is necessary. Further, engagement is aligned to modern theories of behavioural safety which encompass both management and frontline worker behaviour.

## **Elements of Successful Worker Engagement**

Previous research has centred mainly on the benefits of safety committees and trade union safety representatives. In general terms this has shown that workplaces, where management consults with workers, are safer than those where they don't. There is evidence that unionised workplaces are safer; however, this is not always the case. It must not be assumed that the mere presence of trade unions will guarantee lower accident rates.

Common prerequisites, regardless of approach, to aid successful outcomes in this respect are: management cooperation and support; investment in health and safety training; and an open culture of trust. In addition, there may be a benefit in providing workers with access to competent advice on how to enhance worker engagement. This does not necessarily need to come from a trade union source as long as those who give such advice have knowledge and experience of the working environment and health and safety law and practices.

HSE have defined three areas of organisational performance in worker engagement that are desirable to measure: management leadership in providing resources; opportunities for two-way communication; and proof of worker input to decisions and worker issues being addressed. Effective communication and influence on decision making are therefore two key areas to measure.

There is little research on worker engagement specific to the construction industry. Some studies in the United States do show that sites with trade union safety representatives are safer than those without. However, it is acknowledged that most unionised sites are also large sites

where safety levels are generally better and the chances of inspection from government enforcers are higher. Recent research involving 5 case studies in the UK construction industry had mixed findings in terms of effectiveness of safety representatives. In fact the industry sub-sector of each case study and project size (as in the U.S.) seemed to have more of an influence on the findings. The best results came from a civil engineering site, followed by two large metropolitan building sites with two smaller building sites performing lowest. Interesting research regarding safety representatives comes from Ireland where the role is very informal. Research there has found that the presence of safety representatives had the strongest relationship with safety compliance. This was attributed to their informal lines of communication; hazard reporting; and their strong informal disciplinary role.

Direct worker engagement in construction has been studied in relation to workers identifying hazards and reporting injuries. Companies in the U.S., that use worker reports to develop their safety programmes, had lower accident rates. Workplace management activities have also been studied in relation to interaction with construction workers where the most effective foremen monitored worker performance; gave feedback on the consequences of their work; and communicated with workers about non-work related topics. Other research has confirmed that training is a necessary prerequisite for meaningful engagement. Trained workers were found to be better equipped for identifying hazards. Whereas, a lack of training in Hong Kong led to workers being uncooperative or overlooking safety issues.

In engagement there are five key parameters, to measure the scope and depth of issues discussed. These are:

1. *The scope of issues covered*; do they relate purely to physical hazards or do they extend to organisational management, safety culture etc?
2. *The objectives in developing the solutions*; where do they rank in the hierarchy of risk controls? i.e. avoid, reduce or PPE.
3. *The depth of understanding*; of accident causation.
4. *The scope of solutions presented*; similar to 2 above but dealing with whether solutions are aimed at prevention, e.g. through design, or if they are reactive.
5. *The ability to transfer issues*; by involving others when an issue needs action by those out-with the authority of the immediate line manager e.g. senior management, plant manager etc.

Therefore, as an example, where engagement has poor scope and depth workers or their representatives might raise a problem with lack of toilet rolls, whereas engagement with greater scope and depth they might forward a suggestion for a design change to shuttering to improve access.

In decision making the range can be from wholly management 'command and control', which is undesirable in worker engagement terms, to various levels of worker autonomy:

6. *Tells*; Manager makes decision.
7. *Sells*; Manager 'sells' decision.
8. *Tests*; Manager presents decision and invites questions.
9. *Suggests*; Manager presents tentative decision subject to change.
10. *Consults*; Manager presents problem, gets suggestions, makes decision.
11. *Joins*; Manager defines limits, asks group to make decisions with leader/manager as equal member.
12. *Delegates*; Manager requires subordinates to function within limits defined by mutual agreement.

Greater autonomy requires greater levels of worker competence and the quality of decisions, at all levels, can be seen as an indicator of the quality of engagement.

## Method

Presentations and workshops were held in September 2005 to draw on experiences from industry. Presentations on good practice were made by industry practitioners<sup>1</sup>. Over 80 participants attended and were split into 4 workshop groups to discuss: safety committees; union safety representatives; direct management approaches; and informal approaches. Views were collected from the workshops on: 'what works'; barriers to success; and measures of success. This informed the development of four combinations of approach to worker engagement:

1. Pre-task briefings with feedback cards
2. Suggestion schemes with safety circles
3. Informal approach using 'safety champions'
4. Safety representative with H&S committee

*Pre task briefings* involved site management outlining the work to be done at the start of each shift and discussing health and safety issues with the work gangs. *Feedback cards* were given to workers to gain views on any issues they wished to raise.

*Suggestion boxes* were installed and *safety circles* of workers organised, for the purpose of identifying and solving safety problems. Suggestions were fed into the safety circle discussions.

*Informal approaches* involved the site manager walking around the site at least once a shift and discussing safety issues with workers. He kept a diary to record the issues discussed. A worker 'safety champion' was asked to fulfil a similar role. He also carried a diary.

*The safety representative and health & safety committee* is the traditional approach to worker consultation, promoted by the construction Trades Unions. This was a difficult approach to test, as there were no sites available, through project managers MACE, the principal research collaborator, with Trade Union workers; and no worker would volunteer to undertake the role of safety representative. The approach was accommodated through a similar type of contractor, who was already training, with Trade Union assistance, a worker to become a Safety Representative. The approach was not designed and introduced by the research team, but its effect was evaluated in the same way as the other approaches.

All approaches incorporated an "action list" that was used to record issues raised and track whether they were closed out satisfactorily. The fieldwork involved the implementation of the first three worker engagement approaches in individual projects of a major bank refurbishment programme, facilitated by the project managers MACE. Approach number 4 (safety representative) was implemented under the guidance of a Trade Union Safety Adviser. Control sites (operating without any intervention) were used to compare findings. Eight contractors from the bank projects identified sites for interventions and six of these provided control sites. The average site duration was 12 weeks with between five and 50 workers on site at any one time. Interaction with the contractors' workers (staff and sub-contractors) consisted of five activities:

1. A short introduction on the approach to be used;
2. Implementation of the approach, by contractor staff;
3. Maintenance, by staff, of the specified form of worker participation during implementation;

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<sup>1</sup> Available from HSE website: <http://www.hse.gov.uk/construction/engagement/casestudies.htm>

4. 'Before and after' questionnaires of workers and managers, to determine perceptions of the worker engagement safety programme and its impact on a variety of health and safety issues;
5. Discussion of safety performance.

Interviews were also conducted at two Department of Work and Pensions (DWP), Jobcentre Plus refurbishment sites, where worker engagement initiatives had been running for a much longer period, to allow comparison with a more mature programme of worker intervention.

## Findings

**Pre-task briefings with worker feedback cards** were implemented on three sites. All workers interviewed thought the briefings at the start of each shift were useful and most thought the feedback cards were a good visual reminder, although, they were very reluctant to complete them (only three returned in total). Issues covered during engagement were mostly welfare items. One site included feedback from a worker who found suspected asbestos. All three site managers thought the briefings and feedback cards were useful.

Before and after questionnaires found changes in perceptions in relation to opportunities to express views and workers' view of site management's worker engagement effort. Before the intervention 80% of workers thought they had an opportunity to express their views. After the intervention this increased to 90%. When asked "can worker engagement on this site be improved?" 30% replied "No" before. This rose to 64% after the intervention. These were the only areas where a change in perception was seen. No such change was seen on the control sites.

One site returned a low number of questionnaires (eight in total). Workers were predominately sub-contractors. Only 20% of respondents to the questionnaire had received formal H&S training which was far lower than the other two sites.

**Suggestion schemes with safety circles** were implemented on two sites. Workers on one of the sites thought the safety circle meetings were good for identifying and solving specific problems. Issues discussed included storage of materials, which led to planning and management issues being discussed. The suggestion forms were not as useful, indeed, no forms were returned on either of the two sites.

It seemed that commitment from the site manager played a large part in the success of the safety circles. One site manager viewed the approach positively while the other was distinctly negative. The 'positive' site had more involvement from workers. More questionnaires were returned from the positive site, which also had more workers with H&S training. Both sites used mostly sub-contractor labour.

Before the intervention 80% of workers thought management provided adequate H&S information. After the intervention this increased to 100%. With regard to opportunities to express views, 80% replied "Yes" before with 100% after. When asked "can worker engagement on this site be improved?" 44% replied "No" before, and 79% after the intervention.

**Informal approaches were** implemented on three sites. Two of these sites also used '**safety champions**'. Site managers on all three sites thought the informal approach worked well and used site diaries to record issues discussed. These issues included hazard reporting, feedback on health monitoring and recommendations in relation to new equipment. The safety champions (who were site workers) were less inclined to use a site diary.

Before the intervention 90% of workers thought management provided adequate H&S information. After the intervention this changed to just under 100%. When asked “can worker engagement on this site be improved?” 17% replied “No” before. This rose to 74% after the intervention.

Relatively low counts of formal H&S training were reported in the questionnaires. All of the issues discussed related to site and no planning or management issues were discussed. The site diaries also contained several references to conversations where site managers were correcting unsafe behaviour.

**Safety representatives and committee** could not be implemented on any sites due to a lack of volunteers to take on the role of safety representative. This reflects the problems faced by the construction industry in general when trying to appoint safety representatives. A contractor was found through UCATT with its first appointed safety representative undergoing training. Communication between the safety representative and workers was on an informal basis, and predominantly with direct employees rather than sub-contractors, although they were expecting to become involved soon.

Issues discussed with workers included requests for PPE. The safety representative commented that workers on the sites he had worked on, since taking up his new post, were far more safety conscious. Therefore, the mere presence of a safety representative on site would seem to have an effect on others. However, there had not yet been any discussion of management or policy issues. The safety representative advised that he had held discussions with the contractor’s safety manager and hoped to create a formal safety committee.

Questionnaires were issued before and after the training period of the safety representative but no meaningful questionnaire data were collected. The only ‘after’ data were from workers who had not worked with the safety representative.

### **Other site visits**

Two other sites were visited to draw comparisons with the case study sites. These were refurbishment works for DWP Jobcentre Plus, a similar environment to the case studies, where extensive worker engagement practices had already been implemented. The integrated client project team at DWP implemented a mandatory one-day behavioural safety training course for all project members from the client team down to workers on site. The majority of workers on site found the training useful although some who had similar training before found it not as helpful. This was supplemented by site specific site inductions for workers which provided an opportunity to gain feedback. Completing the course allowed workers access to site through the use of an ID card. This card also contained a confidential phone number for workers to call in case they required advice or to report a problem with H&S. Not all workers were aware of the telephone number and none had felt the need to call it, possibly due to the high level of safety and welfare provision on the sites.

Workers also received a STAARR (Stop, Think, Act, Assess, Report and Review) and TASK (Think safety, Act safe, Stop if hazardous, Keep safe) risk assessment booklet. These were used daily by workers. Despite the structured card system in place workers still used informal communication to comment on risk assessments and method statements. Another key aspect of the management of H&S was a site audit conducted by client Environment Health & Safety co-ordinators. Workers gave opinions of their site managers as part of the audit. Workers from the sites observed had given positive feedback for these audits.

Both sites were managed by the same contractor. An interview with its H&S manager was arranged to obtain information on their safety committee. New recruits are asked to spend some time on the committee to comment on their impression of the company and to bring any new ideas. The H&S manager had taken about three years to win the trust of workers, which

included removing line managers from the safety committee team to prevent workers from feeling uncomfortable about discussing H&S.

### **Conclusions**

The findings show that certain elements from each approach were successful whilst others were not as successful. For example, workers were more inclined to participate in face to face oral communication, often of an informal nature. These were pre-start meetings, safety circle meetings and informal conversations with site management. By contrast, attempts to engage workers in written communication, such as feedback cards, suggestion forms and worker diaries, all had little success. Informal communication also succeeded best in other interventions.

This raises questions about the propensity of construction workers to use written methods of communication. This may be the result of low literacy levels, a reluctance to commit opinions to paper for fear of recrimination, or because oral communication just takes less effort. These issues need careful consideration in relation to any workforce engagement.

Those sites where more than 50% of the sampled workers had formal health and safety training recorded more discussion on topics beyond merely site issues. Training also helped workers understand why certain safety controls were in place and raised awareness of hazards.

Most interventions demonstrated improvements in perception of management's provision of information and workers opportunities to express views. In all cases, workers accepted that management were genuine in their attempts to engage workers. This finding suggests that workers may have increased their recognition of worker engagement as a result of exposure to such an intervention.

There were two sites within the case studies that showed a poor response to the interventions. On one occasion the workers, who were sub-contracted, displayed a negative attitude to the intervention. On the other site the manager displayed a negative attitude. This shows how delicate the balance is in relation to worker engagement and how easily it can fail if either party do not see the potential benefits.

Whilst investigating the factors that constitute effective worker engagement it has been found that any approach should have three elements that can be measured, to gauge success:

- Adequate and appropriate resource provision;
- Opportunities for two-way communication;
- Regular audit of the extent to which:
  - decisions have taken account of workers input;
  - issues raised by workers have been followed through.

The provision of resources includes relevant training for both management and workers. Opportunities for two-way communication relates to the mechanisms required to impart information to workers and elicit their views in a systematic, but not necessarily formal, manner. The ability of informal communications to develop a safe and healthy culture as well as gain workers views cannot be overstated. The third element, auditing that decisions take account of input from workers and that there is follow-up action, can be fulfilled with a simple 'action list' to track issues until they are closed out. This does not need to be a separate list but can be integrated with other management tools used for the same purpose.

This study was concerned with smaller, short duration, sites where establishing long-term relationships is difficult. When considering any approach to worker engagement on such sites the following checklist of project activities should be borne in mind:

- Pre-site Training: check extent of previous H&S training and supplement if necessary
- Induction: include opportunity for two-way communication, record issues to be actioned.
- Daily Briefings: formal or informal, two-way communication, record issues to be actioned.
- Site Walk: informal, two-way communication work/non-work, record issues to be actioned.
- Leaving Survey, obtain site & manager safety rating, recommendations/problems, record issues to be actioned.

These measures are considered to be achievable within the limits of the average small site.

### **Recommendations**

Dissemination of practical guidance, based on the problems and solutions discovered in this research, together with other good practice methods observed, should be brought together in a short guide for industry practitioners.

The requirements of worker engagement are enshrined in the CDM Regulations. It is recommended that the findings in relation to oral and informal communication be acted upon by including advice to reduce paperwork and keep the burden of compliance with regulations at a minimum.

With the proposed responsibilities of clients to ensure H&S management arrangements are in place, the findings of this study should be useful to clients, to ensure that appropriate worker engagement provisions have been made by contractors.

### **Further research**

To fully establish the effectiveness of worker engagement approaches within the wider construction industry it is recommended that a measurement tool be developed and promoted. Elements of the questionnaire for this study have already been incorporated into such a tool being developed at Glasgow Caledonian University.

This study was conducted in twelve months which was a relatively short space of time. Therefore, to fully develop the findings and relate them to the wider construction industry, it is recommended that a longitudinal, more broadly based study be undertaken.

The ‘traditional’, worker representative approaches to worker consultation have not been fully tested during this study. The Trade Unions and HSE will doubtless continue to promote these approaches, and ways should be studied of integrating them with other effective worker engagement strategies.

The issue of language used on site was not addressed by this study. However, non-English speaking workers in the industry is a growing problem in relation to worker engagement. Therefore, it is recommended that a further study, incorporating methods of communicating with non-English speaking workers be conducted.

These recommendations are made with the premise that worker engagement is a developing strategy within the industry:

*“Worker engagement should be the cornerstone of every civilised society”*  
(HSC 2004: A Collective Declaration on Worker Involvement).



# 1.0 INTRODUCTION

## 1.1 General introduction

Interaction and collaboration between management and the workforce has been well documented as a superior option for improvement of business performance when compared with the classical autocratic approach to management (Likert 1967; Mintzberg 1983; Deming 1986). This rationale can logically be extended to encompass the management of Occupational Health and Safety (OHS), as well as the performance thereof (Maloney 2003). Shearn lists three arguments for the wider inclusion of workers in decision-making and planning for OHS. These are: 1) potential improvements in psycho-social and organisational development; 2) potential productivity and efficiency gains; and, 3) ethical and legal imperatives (Shearn 2004).

From the “improved social learning” perspective, participation is seen as a problem of efficiency (Shearn 2004). The participative approach allows useful information, which is known to workers at lower levels, to be passed upwards, with subsequent improvements in knowledge distribution and acquisition. Feedback can also provide a useful qualitative check on the practical performance of programmes. In addition to this it is reported that worker participation initiatives have the potential to improve industrial relations through the same process (Marchington 1996). Improved commitment and job satisfaction is also discussed by Shearn, although he only cites behavioural scientists writing in the general field of management, stating that “there is relatively little in the way of an examination of these mechanisms within the OHS literature” (Shearn 2004). In truth, seminal work has been done in this area (Duff *et al.* 1993; Cooper 1998; HSE 1999; Robertson *et al.* 1999) which has led to the publication and development of the HSE guide “Reducing error and influencing behaviour” (HSE 2003) where the role of behaviour in accidents is discussed in depth.

Participation has the potential to increase productivity and efficiency. This can be achieved through innovative behaviour (Shearn 2004). Employee participation can also be associated with higher motivation and performance, fewer intentions to quit, and lower turnover (Spector 1986). Shearn (2004) cites several OHS examples that have also improved productivity (p.4).

So, Shearn’s first two arguments for worker engagement appear to be closely aligned. Indeed, it is difficult to distinguish one from the other. These arguments constitute the underlying rationale for this study.

Shearn’s third argument, that of “ethical and legal imperatives” is ‘a given’ in that workers ought to be involved in decision making at work. It is acknowledged that a shared strategy, aligning worker and management’s interests can reduce conflict within employment relationships and is a feature of any democratic society, encapsulated in the Health and Safety Commission and Executive’s collective declaration on worker involvement, stating that a consulted and involved workforce, contributing to improved health and safety, is a “cornerstone of a civilised society” (HSC 2004).

## 1.2 Aim and objectives

The construction industry has very different product, production, and employment characteristics from other industries. Consequently, techniques and approaches utilised with success in other industries have failed when employed in construction. Given the unique

characteristics of the industry, its products, and its workforce, the primary problem of interest in this study is whether approaches or techniques of worker engagement can be developed for the construction industry that will secure improved performance in a cost effective manner.

Within the UK, construction accounts for approximately 70 fatal accidents per annum<sup>2</sup>, which equates to around one in three of the all-industry total. Major accidents account for around 4000, or a rate of 300 accidents per 100,000 employees per year (HSE 2005b). This rate makes construction the worst industry sector in the country for fatal and major accidents; only exceeded, by agriculture, when including all non-fatal injuries (*ibid*). For ill health, HSE have published figures that show that the industry exceeds the all-industry average rates with respect to: musculoskeletal disorders; occupational dermatitis; mesothelioma, asbestosis and diffuse pleural thickening; and work related hearing loss; with vibration related disorders only surpassed by the extractive industries (*ibid*). Construction, therefore, has a very poor health and safety performance which makes it an important candidate for targeted improvement strategies. In order to address this research problem the following objectives were set:

- 1 review the literature to identify approaches, and techniques of worker engagement
- 2 identify the characteristics of construction that influence the effectiveness of worker engagement
- 3 to develop approaches of worker engagement for the construction industry
- 4 to evaluate these approaches for viability in the industry
- 5 to test the effectiveness of these approaches in securing worker engagement
- 6 to determine the impact of the various approaches for securing worker engagement on health and safety performance as well as on other measures of performance such as productivity, absenteeism (employee retention), turnover and reputation.
- 7 determine the impact of the approaches on worker perceptions of engagement and well-being (Respect for People)
- 8 To assess whether the management structure and processes impact on the viability of worker engagement (management maturity), with particular focus on the commitment of middle (construction site) management.

### **1.3 Method**

The methods employed in the research were (related to the objectives listed above):

1. literature review and synthesis
2. literature review and synthesis
3. synthesis
4. conduct an initial workshop drawing expertise from the industry
5. implement the various engagement approaches, implemented using paired projects (one being a control)
6. document the impact of the approaches on target variables, including evidence of feedback on real safety issues
7. administer survey questionnaires before and after the use of the engagement approach to determine changes in worker perceptions
8. conduct interviews with middle management (site managers and/or foreman) and workers subsequent to completion of intervention

A detailed methodology for the fieldwork was developed after activity 4. This is presented in section 6.8.

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<sup>2</sup> At the time of writing HSE fatal accident figures were just released showing a drop to 59 for the year 2005/06

## **2.0 HISTORICAL DEVELOPMENT**

### **2.1 Craft model**

Historically, construction has been performed using a craft model of organisation in which the planning of the work process in terms of determining what is to be produced, how it is to be produced, where and when it is to be produced, who is to produce it, and what constitutes acceptable quality and quantity of output, is integrated with the actual performance of the work. The Industrial Revolution resulted in the separation of these activities in industries other than construction in the early nineteenth century. It wasn't until late in that century and the early twentieth century that the separation occurred in the construction industry. This shift resulted in construction organisations (other than the very smallest ones) being divided into three functions: business, production related staff, and field production. As a result of differences in education, training, and experience, production staff personnel (middle management) have very different perspectives on the work and its accomplishment than that of the field production staff (site operatives).

### **2.2 Legislative drivers**

Beginning with legislative efforts in the 1970s, worker involvement and consultation have been advanced as an approach to improving health and safety performance in industrial settings. In the United Kingdom, a series of regulations promulgated by HSE that directly address involvement, consultation, and the sharing of information with regard to health and safety are discussed below.

#### **2.2.1 Safety Representatives and Safety Committees Regulations 1977**

The regulations focus on workers represented by a trade union and provide for the appointment of safety representatives by the workers' union. The union will consider a candidate's experience and length of service with the company in appointing safety representatives. The individuals appointed may represent a specific site, part of a large site, or more than one site. Safety representatives must be allowed to undergo appropriate training and be permitted to take time off during work hours, with pay, to perform their duties. The functions of a safety representative are:

1. Consultation with the employer
2. Investigation and reporting of significant hazards and dangerous occurrences
3. Investigation of accidents in the workplace
4. Representation on general health and safety matters
5. Reception of complaints by employees
6. Representation with the Health and Safety Executive or other enforcing authority
7. Reception of information from the enforcing authority
8. Attend meetings of safety committees
9. Carry out inspections of the workplace
10. Inspection of documents

Employers must provide pertinent information and consult and provide assistance to safety representatives. If requested by two or more safety representatives, an employer must establish a safety committee.

## **2.2.2 Health and Safety (Consultation with Employees) Regulations 1996**

Because of the declining proportion of the workforce represented by trades unions, the 1977 regulations did not have the desired impact on employee involvement and consultation on health and safety matters. The 1996 regulations were an effort to provide involvement and consultation for workers without trade union representation. These differ from the 1977 regulations in that they allow for **direct** involvement between the workers and the employer or for representative involvement whereby groups of workers elect a safety representative. Employers have a duty to consult and must provide pertinent information on health and safety issues. The functions and rights of the employees selected as safety representatives are similar to those of the trade union appointed representatives.

## **2.2.3 The Health and Safety (Employee Consultation and Representation) Regulations 2003 (Consultative proposals)**

For a variety of reasons, the 1977 and 1996 regulations did not achieve the desired effect of widespread and meaningful employee involvement and consultation in health and safety matters. In April, 2003, the Health and Safety Executive proposed a new set of regulations, which they hoped would firmly establish its position on involvement and consultation. The proposed regulations stated “There needs to be a forum for all employees to inform the employer of risks they are facing and for these workers to suggest ways to manage these risks” and “...getting the workforce involved at all stages in the decision making on health and safety helps to create an organisational culture which is both supportive and productive.” The HSE’s stated aim was to “develop new ways to establish and maintain an effective health and safety culture in a changing economy so that all employers take their responsibilities seriously, the workforce is fully involved and risks properly minimised.” It also states that trade union paradigm safety representatives are best to involve workers in health and safety.

The then proposed regulations were an effort to harmonise the requirements of the 1977 and 1996 regulations on safety representatives. They stated that an employer has a duty to consult with:

- A trade union appointed safety representative or
- A safety representative elected using the procedure provided for in the regulations or
- Directly with the workers where no safety representative has been elected.

These proposals were eventually shelved and replaced with a “collective declaration on worker involvement” (HSC 2004). This document echoed the sentiments of the proposed regulations but it is unclear as to what status the ‘declaration’ enjoys. The five page document highlights the fact that the whole UK workforce has low union representation (7 ½ million union, 17 ½ million non-union) despite “strong” union-based research implying the effectiveness of the union model for consultation. This issue is discussed in more detail in Section 4.

## **2.2.4 The Management of Health and Safety at Work Regulations 1999**

These regulations require employers to provide employees with information on the arrangements made to address “serious and imminent danger” and danger areas. Employees should be provided with information on the nature of the hazard and the measures taken to protect the employees from it. Employers must also provide employees with information on:

- health and safety risks identified in the risk assessment process
- the preventive and protective measures established
- emergency procedures
- health and safety risks that have been notified to the employer.

Where more than one employer is involved co-operation and co-ordination is required. In relation to construction sites this in effect extends management responsibilities to senior management and even, on occasions, the client.

### **2.2.5 The Construction Design and Management Regulations 1994**

The Construction Design and Management Regulations (CDM) relate to construction projects in the UK. Regulation 18 requires management to obtain “views of workers” (HSE 2001a). This obligates the “Principal Contractor”, who is invariably the main contractor on site, to ensure that employees and the self-employed are able to discuss and offer advice on health and safety matters. Other duty holders, such as the client, designer or planning supervisor, can also play a part in ensuring this gets done by incorporating these issues into project objectives and targets in the Health and Safety Plan.

Thus, there is a twenty-five year history of encouraging involvement, consultation, and information sharing in health and safety matters. The results of this effort in terms of actual involvement, consultation, and information sharing have not met the HSE’s expectations. As discussed in its ‘declaration’, the proportion of the workforce represented by trades unions has declined significantly since 1977 thus reducing the opportunity for trade unions to appoint safety representatives. In organisations without workers represented by trade unions, the great majority do not have safety representatives either because the employer did not make arrangements for a representative or was unsuccessful in identifying individuals willing to serve as safety representatives.

The HSE’s emphasis has been on promoting representative involvement and consultation using the trade union model because of the empirical evidence of improved health and safety performance at sites using this approach (Reilly *et al.* 1995). Evidence shows that union safety representatives often lead to higher levels of compliance and better health and safety performance than non-trade union systems (Litwin 2000), although the vast majority of the UK workforce is non-union. Recent developments include the ‘Worker Safety Adviser Fund’ which has seen greater involvement from trade unions. However, due to the low representation of unions in construction, no more than 15% (Walters *et al.* 2005), other mechanisms may need to be in place to deliver the potential benefits discussed in Section 1.2. The two approaches of union representation and direct worker engagement are not mutually exclusive; they can complement one another with each being effective in particular situations. However, each may have inherent strengths and weaknesses, which, thus far, have not been studied in depth. Thus, further discussion on the various terms and definitions together with the various approaches to involving workers is required.

### **2.2.6 Improving worker involvement – Improving health and safety (CD)**

The Health and Safety Commission (HSC) published a Consultative Document (CD) in April 2006 entitled “Improving worker involvement – Improving health and safety” (HSC 2006). The purpose of this document is to re-emphasise the need for worker involvement and elicit views from industry on how to encourage more and better engagement.

Reference is made in the CD to new legislation, currently being phased in, by the Department for Trade and Industry (DTI). The Information and Consultation with Employees (ICE) Regulations 2004 require employers to inform employee representatives about the organisation's activities and economic situation and to consult them on employment issues and major changes in work organisation or employee's contractual relations (*ibid*: Para 27). There will be obvious synergies between these regulations and current health and safety law that HSC wish to exploit.

The CD is generally neutral regarding different approaches to worker involvement. However, paragraph 54 seems to favour the adoption of indirect safety representatives over direct consultation:

*“Because the new duties apply to dealings with safety representatives and representatives of employee safety, an effect of these changes may be to encourage employers to try to consult employees directly, rather than through representatives. This would be self-defeating because consulting all employees directly could be expensive and time-consuming for many organisations. Employers may therefore consult only superficially in this way, reducing the effectiveness of the consultation process.”* (*ibid*: Para 54).

This perspective has a definite negative view of direct worker engagement which is seen by many as integral to behavioural safety (Duff *et al.* 1993; Robertson *et al.* 1999) as well as wider safety culture issues (Reason 1998; Fleming 2001; Lingard and Blismas 2006). It is only through direct worker engagement that a 'blame-free culture' can be developed to engender the trust and openness that is conducive to such good practices as workers reporting near misses, identifying hazards, and making recommendations.

The view being portrayed by HSC in the CD is possibly the result of underdeveloped research in the area of direct worker engagement.

## 3.0 DEFINITIONS AND TERMS

### 3.1 Traditional forms of participation and consultation

Traditional approaches to worker engagement are enshrined in the legislation regarding consultation with employees as described in Section 2. These are namely ‘safety representatives’, who may or may not be appointed by a trade union; and safety committees, these can have several permutations of management and employee representation. These have been termed ‘indirect’ as shown in Figure 1.

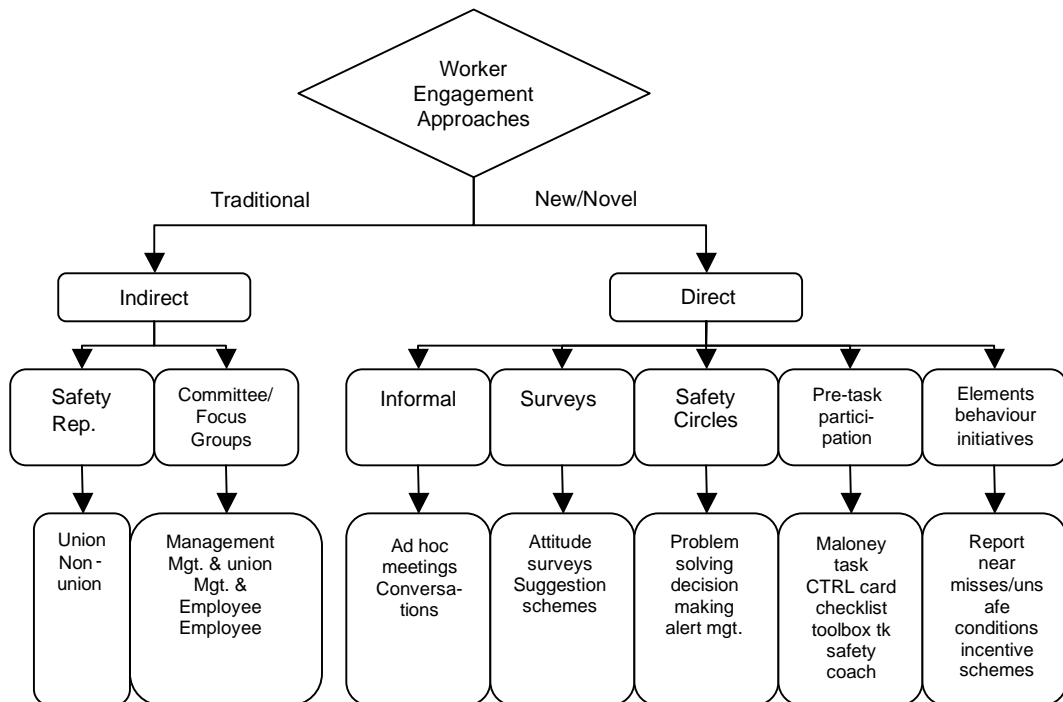


Figure 1 Approaches to involving workers in Health and Safety

### 3.2 Alternative forms of participation and consultation

Other approaches identified include informal; surveys; safety circles; pre-task briefings; and elements of management lead behavioural initiatives. These are now being promoted by industry bodies, trade associations and other intermediaries as valid forms of involving workers in health and safety (Alder *et al.* 2000; Bell and Phelps 2001; ECA 2005; MCG 2005). These can be termed ‘direct’ approaches which can be considered new or novel. A quick summary of these approaches is now discussed.

#### 3.2.1 Informal approaches

Informal approaches consist of ad-hoc meetings or conversations, usually initiated by management when walking through the site, at break-times or even during conversations regarding the work to be done. Despite the “absence of any obligation for managers to act on

related advice or requests” (Shearn 2004), it is one of the most frequently used forms of “consultation” (Hillage *et al.* 2000).

### **3.2.2 Surveys**

Surveys have been used to collectively describe any means of communication through paper-based media, usually without direct contact, but, none-the-less has the ability to reach every worker and can provide anonymity, which makes it a useful approach to alleviate any feelings of apprehension that may exist amongst workers.

### **3.2.3 Safety circles**

Safety circles consist of volunteers who come together for the purpose of solving specific problems. They differ from a safety committee in that they do not have to meet at regular intervals. They are subsequently ‘dissolved’ after each meeting until another problem arises that needs a solution. The concept has evolved from those of ‘quality circles’ (Shearn 2004). This is essentially a reactive approach but could be developed to be more proactive.

### **3.2.4 Pre-task briefings**

Pre-task briefings are instigated at the beginning of a shift or task or when something changes that will affect the worker. This essentially consists of discussing the work to be done and asking the worker to compare the risk assessment controls and method of work with the actual task in hand. Feedback is not restricted to the task and the worker is invited to also discuss any health and safety issue they desire. Maloney discusses this approach in detail, explaining how key decision points; pre-planning, implementation, and reviews can be undertaken regarding health and safety of the work to be done (Maloney 2003). In addition to this Maloney argues that three factors need to be present before workers will decide to become involved. These are opportunity, capability and motivation. Opportunity can be seen as the mechanism for instigating communication between workers and managers, such as the daily briefings. However, Maloney believes meaningful discussions will only take place if workers possess capability, i.e. training, experience and knowledge, and motivation. Intangible benefits thought to motivate workers in this respect may include increased knowledge, respect from their peers and even possible enhanced employment opportunities. However, Maloney warns that the perceived benefits must out way any loss in earnings as a result of getting involved i.e. lost production time.

### **3.2.5 Elements of behavioural initiatives**

There are certain elements of behavioural initiatives that can also be considered as worker engagement. For example incentive schemes to encourage workers to get involved in health and safety and requirements to report unsafe conditions, near misses etc. are also useful (van-der-Schaaf *et al.* 1991). Heinrich’s (1959) theory of unsafe acts leading to minor injuries and eventually to a major injury has prompted many to pursue the control of unsafe acts in an attempt to prevent the inevitable major accident. Other approaches include goal setting and feedback (Duff *et al.* 1993; Cameron 1999) which are familiar management techniques to change behaviour. However, the fostering of safe behaviour is not exclusive to front line workers. Fleming and Lardner (2002), for example, identify two critical management behaviours critical to safety:

- meeting with employees frequently to discuss safety issues
- responding quickly to safety suggestions and concerns raised by employees

### **3.3 Evolution of ‘Worker Engagement’**

#### **3.3.1 Consultation**

Legislative instruments have introduced the term “consultation” as mentioned in Section 2.2. Although no legal definition exists for the phrase consultation HSC guidance states;

*“Consultation involves employers not only giving information to employees but also listening to and taking account of what employees say before they make any health and safety decisions.*

*If a decision involving work equipment, processes or organisation could affect the health and safety of employees, the employer must allow time to give the employees or their representatives information about what is proposed. The employer must also give the employees or their representatives the chance to express their views. Then the employer must take account of these views before they reach a decision.” (HSC 2002)*

The first point to note is the clear requirement for two-way communication. This is an acknowledged pre-requisite for effective communication, Shearn states “top-down and bottom-up communication models are ideal types of WP [Worker Participation]” (Shearn 2004)

The definition assumes only workers with a clear employee/employer relationship should be consulted although in terms of UK health and safety law the test applicable to employment status follows that laid down by the Inland Revenue and is centred around who is in charge of, amongst other things, the work to be done, supply of tools, direction and timekeeping of the worker, etc. (IR56 2004) where certain criteria may result in a sub-contractor having employee rights. Otherwise, and this is frequently the case, most construction main contractors will employ sub-contractors who will fall outside this definition, with several layers of different organisations required to consult only their own employees, which does not appear conducive to integrated project planning and management. Further, the tone of this definition assumes that the employer needs to be ‘policed’ by employees or their representatives, acting almost as a conscience for the employer.

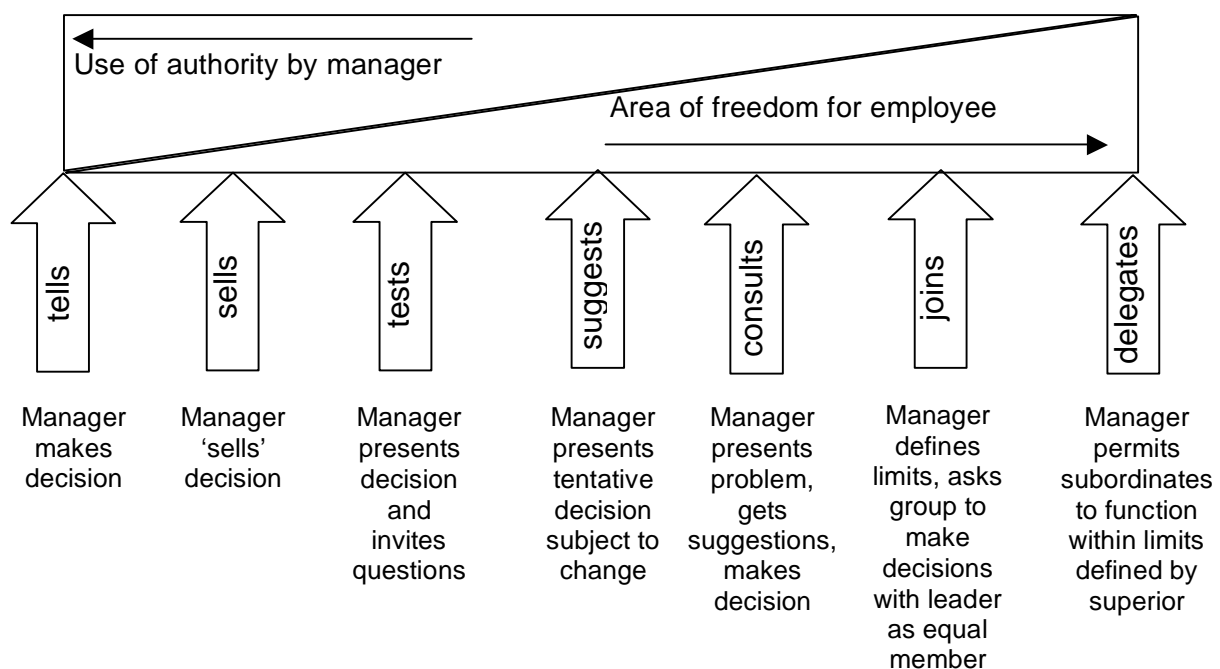
This definition constitutes the minimum legal requirement. Assuming meeting legislation is the minimum requirement, there may be several incremental steps above this, culminating in what is usually termed ‘best practice’.

#### **3.3.2 Participation & Involvement**

‘Participation’ and ‘Involvement’ appear synonymous. Indeed, The Concise Oxford English Dictionary states that to involve is “cause to experience or participate in an activity or situation” (Soanes and Stevenson 2004) and likewise describes participate as to “be involved; take part” (*ibid*). Shearn does not distinguish between consultation and participation (Shearn 2004). However, Maloney sees participation and involvement as the same thing, but separate from consultation, in that the key issue is who makes the decisions, stating it “comes down to a manager’s use of authority in making and implementing decisions versus the freedom to make decisions exercised by subordinates” (Maloney 2003). This is presented as a continuum

where the degree of involvement in the decision making process can be rated against a sliding scale as shown in Figure 2. Shearn also alludes to this concept with reference to “Level of access to decision making” (Shearn 2004). The safety culture maturity model (Fleming 2001) uses a similar continuum and acknowledges involvement of frontline employees as the scale moves from level 1 (emerging) to level 5 (continuous improvement). At level 3, for example, involvement of frontline employees is critical. At level 4 frontline staff accept personal responsibility for their own and others health and safety, whilst level 5 requires all staff to share the belief that health and safety is a critical aspect of their job (*ibid*).

It is also worth noting that HSE use the term “Worker Involvement and consultation” (HSC 2004), which is one of their central areas for delivery of their most recent strategy to reduce workplace accidents. This infers that involvement goes hand in hand with consultation but is possibly the next step along the path from purely meeting the minimum legal requirement for consultation.



**Figure 2 Managerial Authority vs. Subordinate Freedom**

Source: (Maloney 2003) adapted from Tannenbaum, R., & Schmidt, W. H.. “How to choose a leadership pattern,”. Harvard Business Review, May/June., 1973, beginning on p. 162.

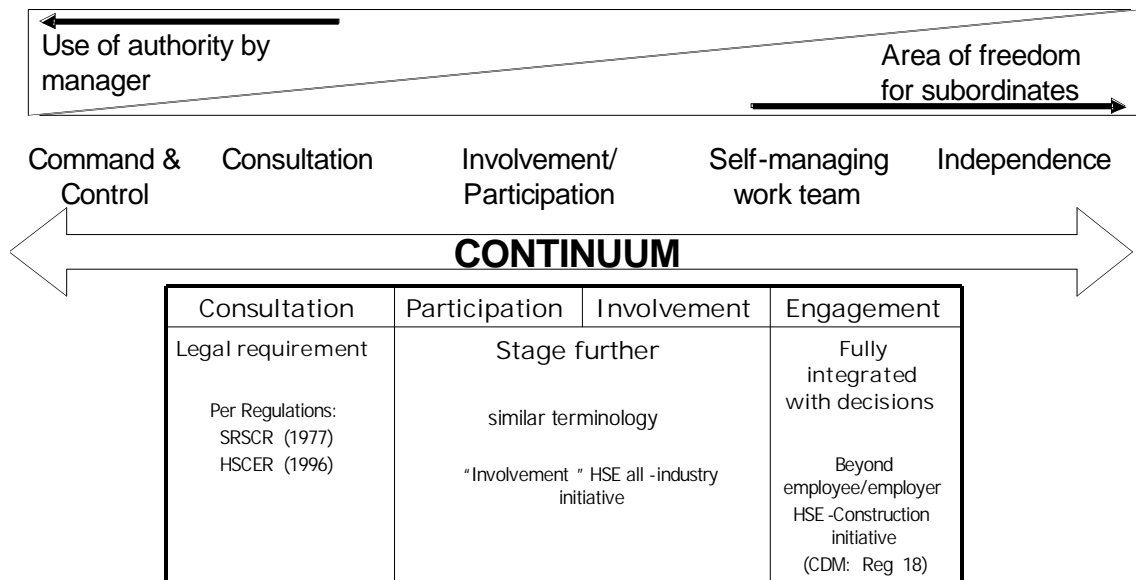
### 3.3.3 Worker Engagement

“Worker Engagement” is the name of the current HSE Construction Division initiative which seeks to;

*“encourage contractors to move beyond a minimum level of workforce consultation, to a point where the workforce is fully engaged in the process of health and safety management on site” (HSE 2005).*

This latest development is seen as a clear intention to encourage the construction industry to rise well beyond the minimum legal requirement, ideally reaching ‘best practice’. Further, in

keeping with the requirements of CDM Regulation 18 (discussed in Section 2.2.5), worker engagement requires **every** worker on a construction site to contribute to the improvement of health and safety. This represents a more holistic view of workforce involvement, rather than the problematic employee/employer situation on site. But more than this, worker engagement is seen as a further step, beyond consulting and influencing decisions, to that of **influencing other workers decisions**, where knowledge and experience is shared and workers help identify and resolve problems before risks appear on site. This definition can be closely aligned to definitions of 'behavioural safety' i.e. influencing the *individual* to act safely after all of the 'hardware' (technical equipment, procedures etc.) are in place (HSE 2003). This conceptual continuum from 'Consultation' to 'Engagement' is presented in Figure 3.



**Figure 3 Worker Engagement Continuum**

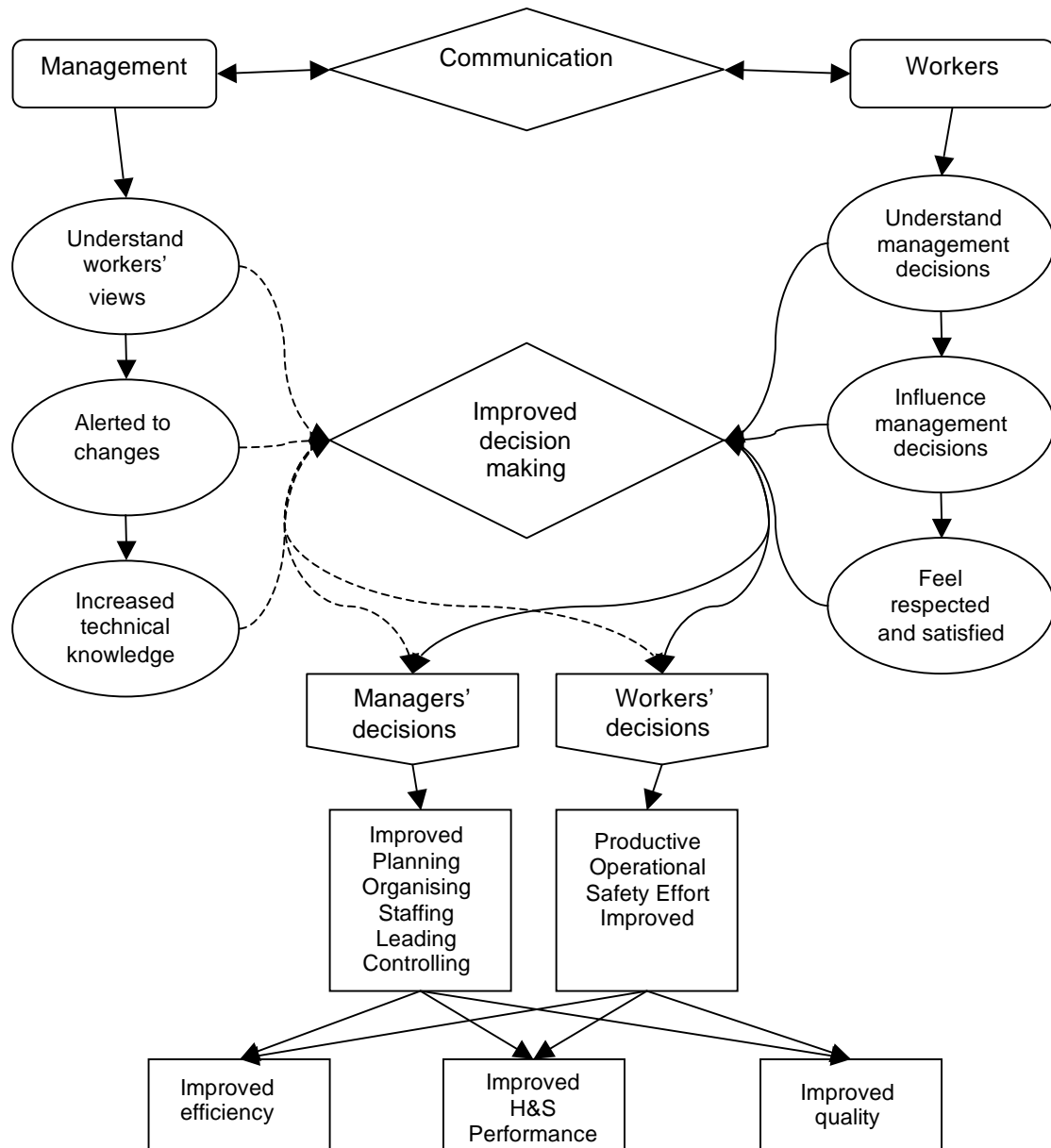
### 3.4 Conceptual model of Worker Engagement

Having discussed a definition of worker engagement it is now important to distinguish those elements that can be measured to determine 'effectiveness'. HSE have highlighted three aspects of worker engagement for their construction division inspectors to assess (HSE 2005a). These are:

- Leadership: providing resources to facilitate worker engagement
- Provide opportunities for two-way communication
- Proof of impact: evidence of decisions being made with workers involved, suggestions and recommendations being answered etc.

This triangulated approach to assessment fits well with the requirements of Worker Engagement discussed in Section 3.3. For example the definition of consultation in Section 3.3.1 requires two-way communication and the form of participation or involvement can be measured in terms of its impact on decisions (Section 3.3.2 & Figure 2). Worker Engagement goes the stage further by requiring all workers on site to be engaged with the main contractor

with the impact on decisions extending beyond management decisions, to those of the workers. Therefore, based on the literature, a conceptual model of worker engagement that demonstrates where to measure effectiveness has been developed, as shown in Figure 4.



**Figure 4 Conceptual model of Worker Engagement**

Figure 4 demonstrates the key issues to measure, in order to establish the effectiveness of Worker Engagement. The first issue at the top end of the model is 'communication'. The double-headed arrows delineate the 'two-way' or 'top-down and bottom-up' communication between management and workers. This is seen as the first step or 'trigger'. The cascading circles under 'MANAGEMENT' and 'WORKERS' indicate the types of benefits each party should be able to display if the communication is useful. The next key issue is the impact on decisions; illustrated by the circle at the centre of the model. This, of course, refers to the decisions of both management and workers. The crossing over of the arrows here demonstrates the ability for workers to influence management and management to influence workers. This, in turn, if the method of engagement has been successful, should result in, better-informed, therefore, improved management and worker decisions. The 'decisions' could easily be substituted by the word 'behaviour'. Although, in reality, many other factors will influence the final outputs at the foot of the model, measuring these can give indicative results. As, with most performance measurement, measurement of the process can be more beneficial than measurement of outputs, (Pickrell *et al.* 1997; CIRIA 1998). Therefore, targeting successful communication and the influence on decision making will be the two key areas on which to focus, to gain useful insight on the subject of the effectiveness of any individual approach to Worker Engagement.

Jensen provides five useful dimensions that support these two key areas in relation to the Danish implementation of "workplace assessment", which is a replacement for risk assessment "including the co-operation of employees" (Jensen 2002). These are listed below with a short explanation of the terms:

1. *The area of issues covered*; do they relate purely to physical hazards or do they extend to e.g. organisational management, safety culture etc?
2. *The objectives in developing the solutions*; where do they rank in the UK equivalent of the hierarchy of risk controls?
3. *The depth of understanding*; in relation to accident causation.
4. *The scope of solutions presented*; similar to 2 above but dealing with whether solutions are aimed at prevention, e.g. through design, or if they are reactive.
5. *The ability to transfer issues*; regarding sphere of influence to others when an issue needs action by those out-with the immediate line manager e.g. senior management, plant manager etc.

These five measures can be used to reinforce any quantitative measure through qualitative analysis of the issues raised during any act of engagement.

Having decided on the strategy, further discussion on the specifics is required before progressing to the detailed research design. Therefore, the following section deals with previous research relevant to the subject area and how this might inform the development of the detailed research design.

## 4.0 EVIDENCE OF THE BENEFITS OF WORKER CONSULTATION, PARTICIPATION, & ENGAGEMENT

### 4.1 All-industry research

An in-depth literature review has been recently published by the Health and Safety Laboratory (HSL) for HSE on worker participation and its application to the management of OSH (Shearn 2004). Therefore, it is not intended to repeat the details of this report here, but rather, to draw on some relevant issues that may inform the development of this study.

Shearn highlights a dearth of research in this area, with unsubstantiated publications in “grey literature” presenting anecdotal evidence as proof of effectiveness (p.14). Two main contributory factors, influencing Shearn’s criticism, are;

- The assumption that undertaking legally compliant WP is seen as an end in itself and improved OSH performance is inevitable;
- Confusion over the effectiveness of WP and factors that *influence* effective WP.

These points are well made as the majority of research within this field has been conducted, or sponsored by, trade unions (HSC 2004). Consequently, the research has been conducted using large organisations where trade unions are more prevalent. Assuming that large, ‘union friendly’, organisations are also well resourced and understand the benefits of good OSH management, it is hardly surprising that unionised workplaces are safer, possibly not as a result of the union model for consultation but through management commitment or some other factor. This issue is revisited in Section 4.2.

Shearn has concisely summarised five potential measures of OSH WP (Shearn *op.cit.*). These are:

1. Reported or recorded accident and illness rates.
2. Perceived levels of effectiveness in improving health and safety performance.
3. Perceived or measured levels of workforce/participant awareness of OHS issues.
4. Perceived safety levels.
5. Propensity to implement safety initiatives.

Shearn identifies the problems of attempting to determine links between methods of WP and measured improvements due to the number of alternative factors (*ibid.* p15). One simple method of mitigating this validity problem is the use of ‘paired case studies’, of similar design, where an organisation implements a new approach while maintaining the existing methods in the ‘control’ case.

Shearn also highlights the need for impartialness, requiring the researcher to refrain from expecting success and consciously looking for any weaknesses or problems; “It is notable that the reviewed case studies focus almost exclusively on perceived benefits, with relatively little attention paid to the negative characteristics or potential pitfalls of WP” (*ibid.*).

More importantly, Shearn cites several cases where combined qualitative and quantitative methods of data collection and analysis are used to good effect:

*“A methodological strength of the combined methods approach is that the qualitative insight into the complexities of people’s beliefs and attitudes can*

*be validated on a larger population sample thereby increasing confidence in overall conclusions". (ibid).*

#### **4.1.1 Safety committees**

As mentioned above previous research has concentrated mainly on the traditional safety committee and safety representative approaches as discussed in Section 3.1. Shearn's summary of research on safety committees includes reference to the work of O'Toole where sustained OSH improvements were made at six US manufacturing plants (O'Toole 1999). Here, voluntary committees performed slightly better than mandatory ones and the use of control plants with no significant improvements help further validate this work.

Research in the UK includes, most notably, the work done by Reilly et al (1995). This study used the data from the British Workplace Industrial Relations Survey 1993, which include employer's estimates of injury rates, to examine the relationship between different types of health and safety consultation and the injury rates within manufacturing establishments.

Reilly *et al's* economic modelling led them to estimate injury rates per 1000 for different scenarios for joint worker/management arrangements for health and safety and one where management deals with health and safety without any consultation. The most compelling finding, in relation to the present study, was a rate of 10.6 per 1000 where management do not consult workers on health and safety compared with a rate of 5.7 fewer injuries per 1000 where trade union appointed committees were in place. Additionally, establishments with no trade union representation were estimated as being 4.9 per 1000 fewer.

This work has become a milestone for research in this area and has been "widely cited by researchers and specialists on occupational health and safety management in support of participative arrangements and the role of trade unions in improving health and safety performance" (Walters *et al.* 2005). For a full list of references on this matter see Walters, Nicholas et al. 2005: p24.

However, subsequent attempts to replicate this work, using more recent data, have not been consistent with Reilly et al's findings (Hillage *et al.* 2000; Walters *et al.* 2005). Hillage et al, for example, gave very mixed results after applying the same methodology to all industries. When compared to the workplaces with no employee representation (14.9 per 1000), *specific* trade union appointed health and safety committees were associated with higher rates of injury (18.0 per 1000), although *general* health and safety committees (that cover various topics, including OHS), with members appointed by trade unions, were associated with lower rates of injury (9.0 per 1000). Hillage et al gave the explanation that specialised committees are more likely to be formed in workplaces with greater levels of inherent risk, where injury rates would plausibly be higher. However, Shearn points out that "these conditions would presumably affect all studies, and results would be expected to reflect this consistency" (Shearn 2004).

Likewise Walters et al's results "were inconsistent and produced varying effects on injury rates" (Walters *et al.* 2005) which they conclude is the result of "too many variables and too few cases" (*ibid*). Further, Walters et al failed to replicate Reilly et al using both recent data *and* the existing source data. They state;

*"We concluded that the fundamental reason for such differences is to be found in the extremely sensitive nature of the data set in which the behaviour of a total of more than 40 variables is investigated in a study of only 436*

*cases (432 in Reilly et al). This suggests that minor differences in the construction of our sample, which were an unavoidable consequence of the limits of the information provided by Reilly et al in the published report of their findings, led to major differences in the results of the two analyses. This leads us to conclude that the findings on the effects of various forms of joint arrangements and especially on the role of trade unions in influencing outcomes in terms of health and safety that are at the heart of the paper by Reilly et al, are unreliable in demonstrating the positive role of worker participation in health and safety arrangements.” (ibid:p27).*

Interestingly, Walters et al use these findings to call into doubt the use of *direct* consultation, (*ibid*:p31). It would appear they see consultative committees and direct consultation as one in the same, stating “Since such consultation is in effect at the whim of management we would not expect it to have a beneficial effect on injury rates but this particular matter remains open to empirical verification in future industrial relations surveys.” (*ibid*). This opinion also confirms Walters et al’s open favouritism of the trade union model of representation which is discussed more in Section 4.2.

#### **4.1.2 The ‘Union Effect’ on OSH**

Despite the problems discussed above with the work of Reilly et al, many have gone on to elaborate on the finding of improved OSH where unions are present, see (Ochsner and Grunberg 1998; Weil 1999; Litwin 2000). Ochsner and Greenberg’s (1998) study provides strong evidence that effective worker involvement is more apparent within workplaces where unions provide support for workers. In their survey of 421 American health and safety professionals, their analyses indicate that “formal union negotiations” and “worker activism” are the two most important characteristics of an effective program. Weil (1999) suggests that management initiated safety committees do not act as effectively as union organised safety initiatives in complying with regulations. Litwin (2000) goes even further, finding “unions gravitate to accident prone workplaces and react by reducing injury rates”. These studies represent some of the more definitive results. However, other research has not been as clear cut.

Statements from trade union writers, seeking to present the research in favour of union interventions can be somewhat selective in portraying an overwhelming range of evidence. For example “Several other analysis of the same [Reilly et al] figures have all concluded that the arrangements that lead to the highest injury rates are where management deals with Occupational Health and Safety without consultation” (TUC 2005). This statement merely states consultation is associated with lower accident rates when compared to ‘no consultation’ regardless of trade union influence. Likewise, Walters et al is quoted; “the general conclusion that health and safety should not be left to management should be supported” (*ibid*) which states nothing about the union effect, indeed Walters et al is highly critical of the Reilly study (as discussed in 4.1.1 above). Further, the same text states “it is not only injuries that trade unions help reduce. It is also ill-health” (*ibid*). this relates to (Robinson and Smallman 2000) which actually found quite mixed results; for example general committees with members appointed by trade unions have a significant *negative* effect on injury rates but that specific OSH committees with members appointed by trade unions have a significant *positive* effect (*ibid*: Table 7). In addition to this, other studies, such as Eaton and Nocerino (2000) were not able to find any strong association between worker consultation and union support, although worker participation was, in general, associated with lower levels of accidents and illness (Eaton and Nocerino 2000).

It must not be assumed that merely the presence of trade unions will guarantee lower rates. In general, Scandinavian workforces enjoy a high percentage of union membership e.g. Sweden and Denmark are over 80% unionised (EIRO 2004), however, the UK's (approximately 26% unionised) Standardised Incidence Rate for over three day accidents is lower than Denmark's but higher than Sweden's (HSE 2000). This anomaly presents the question 'what makes Sweden's rate lower than the UK's but Denmark's higher given *both* Scandinavian countries have far more union representation?' Jensen's study (2002) in Denmark concluded "the outcome of a legitimate participatory programme supported by more formal agencies in a country characterized by a high level of unionization has not been as substantial as might be expected". This is not to say that Jensen has discounted the union model, he advocates it in terms of "external support", however, his main argument is for an OSH professional to act as an intermediary regarding "conflicting interests" and acting as an "agent" and to have "access to the relevant decision making arenas" to influence the working environment (*ibid*:p.222). Jensen goes on to list "three important interrelated areas of attention" for these professionals:

1. *local understanding of the field (the local theory)*
2. *the role of work environment in a general organizational context*
3. *the incentives imposed on the organization for handling occupational health and safety (ibid:p.223)*

There are some words and phrases requiring translation here, as well as some contextualising to be done. *Local understanding* and *local theory* relate to having experiential knowledge of the problems associated with "work environment", causes of these problems, the legal and moral implications of these problems, and what course of action to take (*ibid*:p.213). This terminology only makes sense when read in conjunction with Jensen's definition of "work environment":

*"The concept of 'work environment' is a translation of the concept arbejdsmiljø, which is used in Scandinavian countries. It is not identical to but corresponds to the concepts 'occupational health and safety', 'industrial ergonomics' and 'human factors' in English-speaking countries." (ibid:p.225).*

Therefore Jensen is advocating the use of a professional who is 'competent' in both the specialist (local) area of work as well as OSH management, including aspects of behavioural safety. The third requirement is probably the easiest to contextualise i.e. be able to 'prove the business case'. Put in the context of this study, Jensen has made the case for direct worker engagement in partnership with a competent OSH professional who possesses the correct interpersonal skills to shape OSH outcomes for the better. Jensen sees this as a supporting role to work in tandem with trade union involvement "The group of professionals would not take over the handling of the working environment", however, he goes on to say "but would facilitate the participatory process, not only within the safety organisation [safety committees] but also within the enterprise" (*ibid*:p.223). This would indicate that access to competent advice is the real factor with the ability to enhance worker engagement, which does not necessarily need to come from a trade union source.

The evidence for the union effect is therefore, possibly, not as overwhelming as some may portray and even the most referenced cases should be interrogated for academic rigor and clarity before accepting their validity. Further, the mere presence of unions should not be taken as a guarantee of improved OSH performance, indeed, it may be purely coincidental. This may also be true of research conducted within the construction industry which is the next area for discussion.

## **4.2 Construction industry research**

The construction industry has a relatively poor health and safety record, as discussed in 1.2 above. Construction is considered, undoubtedly, high risk in health and safety terms. In addition to this the industry has, in general, many characteristics which present barriers to successful systematic management of, inter alia, health and safety. For example; extensive use of sub-contractors means multi-employer conditions can develop, potentially, causing conflict and confusion; linked to this is the prevalence of complex contractual arrangements that can lead to similar problems; the temporary nature of the working environment, with ever changing hazards from day to day; combined with the peripatetic workforce means consistency and stability is often difficult to achieve.

It is hardly surprising then that improvements in health and safety resulting from worker involvement seen in other industries has not come to fruition in construction. Despite this some research has been done that can help inform this study.

### **4.2.1 Identifying issues and benefits**

Empirical research examining the relationship between safety climate and safe work behaviour on construction sites, via a questionnaire survey, found workers' involvement was one of seven factors important to achieving a positive safety climate (Mohamed 2002). In his analysis Mohamed interpreted worker involvement as dealing mainly with identifying hazards and reporting injuries rather than being given a democratic right; "Workers' involvement includes such issues as procedures for reporting injuries and potentially hazardous situations" (*ibid*). Abudayyeh et al states, when identifying safety issues in construction, "a successful safety program relies on the participation of both managers and workers in policymaking and in establishing a feedback system that drives continuous improvement" (Abudayyeh *et al.* 2005). Further, their investigation into management's commitment to construction safety found that just under 50% of better performing companies updated safety programmes using "personnel reports, which include worker's suggestions, ideas, and feedback" (*ibid*). Abudayyeh et al's understanding of worker involvement is similar to Mohamed's, in that the perceived benefit is through "personal responsibility and continuous feedback" (*ibid*). Communication skills were also highlighted by these two studies. Mattila et al studied supervisor's behaviour in relation to safety on building sites. They found that the most effective foremen exhibited three main characteristics which made them both effective managers as well as higher performing in safety performance. These were; monitoring worker performance; giving workers feedback about the consequences of their work; and communicating with workers about non-work related topics (Mattila *et al.* 1994). In particular, they highlighted the importance of this particular type of communication, stating it "gives the manager information about the real state of production and about problems" (*ibid*). Therefore, a key aspect of worker engagement identified in the construction research, so far, is two way communication, as discussed in 3.3.1.

Other research shows that reliable and valid feedback from workers can only be achieved through sufficient training and experience, for example, a study of root causes of construction accidents concluded "workers who do not have sufficient training or knowledge about their jobs should not be expected to identify all unsafe conditions surrounding their work" (Abdelhamid and Everett 2000). Conversely, research done in Hong Kong identified workers who were "passive on safety issue and have poor safety attitudes" (Fung *et al.* 2005). These workers were "uncooperative" and "overlooked safety", which the researchers attributed to lack of training and education (*ibid*).

Research specifically looking at communication and participation in construction found the most common approaches to worker involvement used were; “identifying and resolving health and safety problems (hazard spotting); risk assessment; accident investigation; equipment design and selecting PPE and equipment. These are more effective if involvement is on a voluntary basis as this ensures ownership” (Lancaster *et al.* 2001). In addition, the most common forms of communication were; “health and safety training; induction training; tool-box talks; health and safety meetings; notice boards; and newsletters. These are more effective if they are two-way and involve all stakeholders including sub-contractors” (*ibid*).

#### 4.2.2 Union influence

Despite the existence of widespread literature on the union effect on health and safety there is relatively little in the field of construction, possibly due to the characteristics of the industry stated above.

Gillen *et al* studied injured construction workers with specific emphasis on whether they were union or non-union workers to gain insight to their perceptions of workplace safety climate, psychological job demands, decision latitude, and co-worker support, all in relation to the severity of the injuries they incurred. Union status was found to be one of three factors having a statistically significant effect on the variance of the scores achieved by the data collection instrument (Gillen *et al.* 2002), therefore, they concluded “union members viewed the safety climate at their worksites more favourably”. It is interesting to note in their conclusions they list “the tendency for large union construction sites to be more vigorously monitored by the Occupational Safety and Health Administration” as one of the underlying factors for this (*ibid*). There may be an argument that the “large” site is, in actual fact, the factor. Studies into the size of contractor in relation to safety performance have shown the larger the contractor or the site the better the performance (BOMEL 2001; BOMEL 2003; Cameron *et al.* 2005).

The recent research (discussed earlier in 4.1.2) carried out by Walters *et al* (2005) is of particular importance to this study as it included the analysis of five case studies from the construction industry. In actual fact, two industries were targeted by Walters *et al* for case studies. The second was the chemicals industry. The five case studies here were all establishments within the chemicals sector that employed union safety representatives. These showed favourable results based on a combination of quantitative and qualitative analysis of the perceived benefits of consultation and representation despite over three day accidents for the case studies being fairly mixed when compared to the sector average (*ibid*: Table 5.7). The construction industry case studies, however, do not seem to be as clear cut.

Only two of the five construction industry case studies included any formal union involvement (case studies four and five). Considering the small percentage of unionisation within construction reported by Walters *et al*, 14.4 per cent (*ibid*: p.81), this would be considered an overrepresentation in the case studies. A short summary of each is presented below, based on the descriptions given of the organisations (*ibid*: p.88), and arrangements for representation and consultation (*ibid*: p.100):

1. A range of building work for both private and public sector clients. Non-unionised, no formal structures or procedures for representative consultation, but formal and informal arrangements for direct consultation.
2. Same as case study one above.
3. Mainly involved in water and sewage construction and maintenance. Non-unionised sites in which there were arrangements for non-union representative consultation as well as those for direct consultation with workers

4. Based at major metropolitan construction projects. Unionised sites, trade union engagement in representing workers' interests, including health and safety, but no dedicated safety representative.
5. Based at major metropolitan construction projects. Unionised sites, health and safety representation and consultation per the SRSC Regulations.

The quantitative findings for the construction case studies are difficult to interpret; due to changes made in table formats and, even the lack of tables, when compared to the chemicals industry presentation of findings. For example, data for the five case studies, presented previously under headings one to five, are regrouped in some tables under the headings *main employer*, *sub-contractor* and *agency* (e.g. Tables 6.9; 6.13; 6.14; 6.15). Although this highlights the interesting, and somewhat obvious, deterioration of results from main employer to agency worker, it is, arguably, peripheral to the main analysis, which seeks to evaluate the role and effectiveness of safety representatives in influencing workplace health and safety.

This change in emphasis detracts from the case-by-case analysis done earlier, which seems a little confusing. However, even more puzzling, is the quantitative data that is reported in the text. A key section of analysis "Health and safety representation and consultation" is not accompanied by a table, but rather, percentages quoted in the text. Although some data is not reported at all, it is possible to create a table from the information given on page 101 (*ibid*). This data is based on a questionnaire given to workers and is shown in Table 1 below. Note that the title is taken from Table 6.14 which presents the same data under *main employer*, *sub-contractor* and *agency* thereby precluding case-by-case analysis (*ibid*).

**Table 1 Percentage of manual workers consulted on various aspects of OHS management**

<b>Experience of consultation</b>	<b>Case study 1</b>	<b>Case study 2</b>	<b>Case study 3</b>	<b>Case study 4</b>	<b>Case study 5</b>
Frequently consulted	21	23	57	38	22
On safety policy	57	52	62	52	28
On risk assessment	54	43	60	52	28
On procedures for reporting accidents	54	48	81	48	-
Hardly ever consulted	36	59	-	-	-

(based on data from Walters et al 2005: p101)

Table 1 shows results in relation to five issues. 'Frequently consulted' and 'Hardly ever consulted' are two sides of the same question. It can be seen from the figures given by Walters et al that case study three has yielded the most favourable results, 57%, regarding the overall issue of workers being consulted on OHS. Case study four is second, with one, two and five being much the same. Interestingly enough, Walters et al draws attention to case study one and two's percentage of 'Hardly ever consulted' responses without giving the others to compare with. For example, case study one; "However, over one third of respondents (36 per cent) said they were hardly ever or never consulted on health and safety." And for case study two; "However, 59 per cent of manual worker respondents said they were hardly ever or never consulted on health and safety matters." (*ibid*: p.101).

The other three issues of being consulted on ‘safety policy’, ‘risk assessment’, and ‘procedures for reporting accidents’ show similar results with the exception of case study five which scores very low. No figure was given for case study five’s results on ‘procedures for reporting accidents’. Walters et al speculate the reason for case study five’s low scores is that management would probably “consult with the safety representative rather than the workers directly” (*ibid*: p106). However, this does not explain case study five’s scores elsewhere which were lower than the majority of the other case studies, e.g. induction training (*ibid*: Table 6.12).

When taken in its entirety, the presentation of the quantitative data shows case study three to be the best, based on Walters et al’s data collection instrument (*ibid*: App.2), which is in line with Table 1 above. Based on the description of the type of work undertaken by case study employer three, i.e. water and sewage construction and maintenance, it could be assumed that this employer is a civil engineering company<sup>3</sup>. Assuming the commonly held notion that the civil engineering sector performs better on OSH than the building sector, then this could be expected. Further, that larger contractors and sites perform, on average, better than smaller sites (as discussed above), it can be postulated that the expected forecast of results may be:

1<sup>st</sup> Case study 3 (engineering)

2<sup>nd</sup> & 3<sup>rd</sup> Case studies 4 & 5 (large metropolitan sites)

4<sup>th</sup> & 5<sup>th</sup> Case studies 1 & 2 (smaller building works)

This hypothesis is borne out in Walters et al’s quantitative findings with the exception of case study five (trade union safety representative) which drops to 4<sup>th</sup> or 5<sup>th</sup> on most occasions.

The qualitative analysis presented by Walters et al includes quotes from workers to explicate some of the quantitative findings. Substantial discussion takes place regarding case study three’s use of a “safety champion” which Walters et al seek to compare with the statutory safety representative role in case study five (*ibid*: p.102). They are quite critical of the safety champion in this respect; “It was apparent that many workers were unaware of the existence of a safety champion” and go on to say:

*“They had neither inspection nor investigative functions such as those bestowed on safety representatives under the SRSC Regulations nor even the more limited functions and facilities granted to representatives of employee safety under the H&S(CwE) Regulations.” (ibid: p.102).*

A key aspect highlighted by Walters et al is a two-fold issue of whom workers would speak to first in the event of a health and safety problem and the likelihood of that person resolving it. The safety champion responses amounted to 6% and 7% respectively. This was in contrast to the safety representative results; “However, in case study 5, by far the largest proportion of respondents (47 per cent) indicated that they thought it would be the safety representative who would be most likely to resolve their health and safety problems.” (*ibid*: p.109).

Walters et al conclude from their analysis of the five construction firms’ approach to worker consultation and representation that “the most effective were those in which trade unions were involved” (*ibid*: p.106). It is difficult to see how they have come to this conclusion in relation to how the workers involved have responded. The only effective measure that stands out is the ability of a union appointed safety representative to satisfy their statutory duties in comparison to other direct and quasi-representation approaches.

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<sup>3</sup> Walters et al have not given the names of the companies involved in their study

A study, cited by Walters et al, that highlighted the superior OSH performance of safety representatives was that of McDonald and Hyrmak (2002). These researchers compared actual injury rates on Irish construction sites with perceptions of workers and managers, the risk management system in place and OHS enforcement. They found “the variable with the strongest relationship with safety compliance is the presence or absence of a safety representative” (McDonald and Hyrmak; cited in Walters et al 2005: p.21). What Walters et al fail to either realise or explain in their report is that the majority of these representatives are not trade union appointed. Although they were appointments under the Irish statutory instrument, the Safety, Health and Welfare at Work (Construction) Regulations, 2001, they can only be described as ‘informal’ as illustrated by the authors of the Irish study:

*“It is worth noting that most of these safety representatives are, in no formal sense, representatives –as they were appointed by management rather than elected by their fellow workers. This in turn suggests the strong and important role of informal mechanisms of influence and persuasion in developing effective safety management. The role of safety representatives in ensuring the job goes smoothly, in facilitating communication, hazard reporting, and playing a strong informal disciplinary role was repeatedly highlighted in the interviews.” (McDonald and Hyrmak, 2002: p.71)*

This study does not exactly strengthen the argument for including systematically appointed and consulted union safety representatives in construction, but instead, the use of *informal* safety representatives.

In summary, the body of research conducted within the construction industry mirrors the wider work in that management leadership and effective formal, as well as informal, communication play vital roles in the effectiveness of worker engagement. Although the presence of trade union involvement can be seen where OSH performance is better in some cases there is also evidence to suggest the former is more relevant. Contractor size may also play a role as trade union involvement is invariably seen on larger sites.

## 5.0 SUMMARY OF LITERATURE REVIEW

### ***5.1 Review the literature to identify approaches, models, and techniques of worker engagement.***

Legislative drivers, starting in the 1970's, have sought to encourage the democratic participation of workers in the planning and management of OSH. Traditional approaches to worker engagement are enshrined in this legislation as discussed in Section 2.2. These consist of 'safety representatives', who may or may not be appointed by a trade union; and safety committees, which can have several permutations of management and employee representation. These have been termed 'indirect'. Other approaches identified in Section 3.2 include informal; surveys; safety circles; pre-task briefings; and elements of management lead behavioural initiatives. These can be termed 'direct' approaches which can be considered new or novel.

Research in the UK includes, most notably, the work done by Reilly et al (1995). The most compelling finding, in relation to the present study, was a rate of 10.6 injuries per 1000 where management do not consult workers on health and safety compared with a rate of 4.9 injuries per 1000 where trade union appointed committees were in place. Additionally, establishments who consult but with no trade union representation were estimated as being 5.7 per 1000. However, subsequent attempts to replicate this work, using more recent data, have not been consistent with Reilly et al's findings (see 4.1.1). Despite this, many have gone on to elaborate on the finding of improved OSH where unions are present. There are, however, exceptions to this and the union effect is not conclusively demonstrated. Jensen has made the case for direct worker engagement in partnership with a competent OSH professional who possesses the correct interpersonal skills to shape OSH outcomes for the better. This would indicate that access to competent advice is the real factor with the ability to enhance worker engagement, which does not necessarily need to come from a trade union source (as discussed in 4.1.2). The evidence for the union effect is therefore, possibly, not as overwhelming as some may portray and should not be taken as a guarantee of improved OSH performance.

### ***5.2 Identify the characteristics of construction that influence the effectiveness of worker engagement.***

Due to the unique characteristics of the construction industry and the low level of unionisation the traditional approaches have not had the desired effect. The 'worker engagement' initiative by the HSE construction division is seen as a clear intention to encourage the construction industry to rise well beyond the minimum legal requirement, moving towards 'best practice'. Worker engagement requires **every** worker on a construction site to contribute to the improvement of health and safety. This represents a more holistic view of workforce involvement on site.

The construction industry has a relatively poor health and safety record, which, in part, can be attributed to; the extensive use of sub-contractors, which means multi-employer conditions can develop, potentially, causing conflict and confusion; linked to this is the prevalence of complex contractual arrangements that can lead to similar problems; the temporary nature of the working environment, with ever changing hazards from day to day; combined with the peripatetic workforce, that means consistency and stability is often difficult to achieve.

Construction researchers have seen worker engagement as dealing mainly with identifying hazards and reporting injuries rather than being given a democratic right (see 4.2.1). Research also shows that reliable and valid feedback from workers can only be achieved through sufficient training and experience. One study found that the most effective foremen exhibited three main characteristics which made them both effective managers as well as higher performing in safety. These were; monitoring worker performance; giving workers feedback about the consequences of their work; and communicating with workers about non-work related topics, which give the manager information about the real state of production and about problems. Therefore, a key aspect of worker engagement identified in the construction research, so far, is two way communication. Research specifically looking at communication and participation in construction found the most common approaches to worker involvement used were; identifying and resolving health and safety problems (hazard spotting); risk assessment; accident investigation; equipment design and selecting PPE and equipment. These are more effective if involvement is on a voluntary basis as this ensures ownership. In addition, the most common forms of communication were; “health and safety training; induction training; tool-box talks; health and safety meetings; notice boards; and newsletters. These are more effective if they are two-way and involve all stakeholders including sub-contractors (see 4.2.1).

With regard to the ‘union effect’ within construction, one American study found union members viewed the safety climate at their worksites more favourably. Also, reference to ‘large’ union construction sites implies there may be an argument that the large site is, in actual fact, the real factor. Walters et al conducted five case studies in the UK that show problems with the union model of representation. They speculate the reason for this is that management would probably consult with the safety representative rather than the workers directly. However, this does not explain percentages elsewhere which were lower than the majority of the other case studies, e.g. induction training (see 4.2.2). It is hypothesised by the authors that the size and type of site plays more of a role than unionisation. This hypothesis seems to be bourn out in Walters et al’s quantitative findings. It is difficult to see how Walters et al have come to their conclusions in relation to how the construction workers involved have responded. The only effective measure that stands out is the ability of a union appointed safety representative to satisfy their statutory duties in comparison to other direct and quasi-representation approaches.

Another construction study, that took place in Ireland, found safety representatives to be the most relevant factor to OSH performance. Here the researchers compared actual injury rates on construction sites with perceptions of workers and managers, the risk management system in place and OHS enforcement. The majority of these representatives were not trade union appointed and, although statutory appointments under the Irish statutory instrument, can only be described as ‘informal’.

In summary, the body of research conducted within the construction industry mirrors the wider work in that management leadership and effective formal, as well as informal, communication play vital roles in the effectiveness of worker engagement. Although the presence of trade union involvement can be seen where OSH performance is better in some cases there is also evidence to suggest the former is more relevant and contractor size may also play a role as trade union involvement is invariably seen on larger sites.

### **5.3 To inform the development of approaches to worker engagement for the construction industry**

Measurements of worker engagement were sought to inform the development of potentially effective approaches, these include HSE's guidance for inspectors (see 3.4):

1. Leadership: providing resources to facilitate worker engagement
2. Provide opportunities for two-way communication
3. Proof of impact: evidence of decisions being made with workers involved, suggestions and recommendations being answered etc.

Leadership includes, mainly, setting up some mechanism, in the first instance, to facilitate worker engagement, as well as the support, such as training and allowing time on site for the process. Communication must be 'two-way' or 'top-down and bottom-up' communication between management and workers. The next key issue is the impact on decisions. This refers to the decisions of both management and workers, i.e. the ability for workers to influence management and management to influence workers. This, in turn, if the method of engagement has been successful, should result in, better-informed, therefore, improved management and worker decisions. Although, in reality, many other factors will influence the final outputs, measuring these can give indicative results. Targeting successful communication and the influence on decision making will be the two key areas to focus on to gain useful insight on the subject of the effectiveness of any individual approach to Worker Engagement. In addition, sub-issues will include, per Jensen (see 3.4):

1. *The area of issues covered*; do they relate purely to physical hazards or do they extend to e.g. organisational management, safety culture etc?
2. *The objectives in developing the solutions*; where do they rank in the hierarchy of risk controls?
3. *The depth of understanding*; in relation to accident causation.
4. *The scope of solutions presented*; similar to 2 above but dealing with whether solutions are aimed at prevention, e.g. through design, or if they are reactive.
5. *The ability to transfer issues*; regarding sphere of influence to others when an issue needs action by those out-with the immediate line manager e.g. senior management, plant manager etc.

The OSH outputs that can be measured include, per Shearn (see 4.1):

6. Reported or recorded accident and illness rates.
7. Perceived levels of effectiveness in improving health and safety performance.
8. Perceived or measured levels of workforce/participant awareness of OHS issues.
9. Perceived safety levels.
10. Propensity to implement safety initiatives.

## 6.0 INDUSTRY WORKSHOPS

### 6.1 Introduction

Various approaches to worker engagement were presented at an industry workshop, held September 2005 in Glasgow, to gain feedback on specific issues uncovered during the literature search. This involved over 80 participants from a cross-section of the industry and although the event was held in Scotland there were a number of delegates from all over the UK. Issues were discussed in four workshop groups:

1. Safety committees
2. Union Safety Representatives
3. Direct Management approaches
4. Informal approaches

The results of this exercise were categorised into ‘what works’, ‘barriers’ (and where possible) ‘solutions and measures’ (what could be measured to determine success). The results are summarised in Table 2 and discussed further below.

**Table 2 Findings of industry workshop on worker engagement**

	<b>WHAT WORKS</b>	<b>BARRIERS</b>	<b>MEASURES</b>
<b>Safety committees</b>	Workers Union sites Client commitment Empowered	Lack of trust/apathy Fails to work Intimidation Small Sites	Resources Influence decisions Who Outstanding issues
<b>Union Safety Representatives</b>	Soft approach Local Government TU Training Team approach	Migrant workforce Finance exclusive Combined approaches	Was not discussed.
<b>Direct Management approaches</b>	Training Feedback Demonstration Communication skills Motivation	Workers reluctance Trade Union Blame Culture Traditional Contracts	Test Whistle blowing Survey Feedback
<b>Informal approaches</b>	Workers self ownership Non-financial rewards Listening Self Policing/Auditing	Reluctance Suspicion of management Peer Pressure	Suggestions Responses

## **6.2 Safety committees**

It was agreed by this group that improved communication was the greatest single potential benefit of H&S committees. The act of “getting people talking” was thought to be very positive. Therefore giving everyone an equal voice was seen as paramount. The group agreed that the more workers that attend the better. A preferred ratio was agreed to be at least 4 workers to 1 manager. Union sites were noted as having more workers willing to volunteer compared to non-union sites. Client commitment, providing adequate finance and showing a willingness to co-operate on issues that he has influence over, was discussed. Although it was suggested that there are good clients that do not get involved with H&S committees. Empowered committees work best, this could be via management commitment.

Barriers discussed included a lack of trust or apathy, especially when concerns and issues “fall on deaf ears” and “nodding dogs” fail to act. This can be overcome through delivery of results by management when issues are raised, i.e. closing out issues. The committee may fail to work; either the committee achieves nothing (as mentioned above) or is frustrated by individuals with other agendas, including irrelevant “general complaints”. A solution put forward by the group to combat this was to measure performance. This is discussed in more detail below. Intimidation was seen as a problem, whether real or only perceived, it was acknowledged that workers can sometimes feel intimidated by managers on committees. As discussed above, it was suggested that the 4:1 ratio of workers to managers could help alleviate this problem. Small Sites were seen as needing a slightly different approach; at a certain level a formal committee is too cumbersome (the level of this “threshold” could not be determined by the group); it was suggested that an “open door” policy from managers works better on small sites; as well as informal meetings, possibly as part of a “site walk”.

Several ‘measurement’ issues were discussed. Outstanding issues were seen as the most vital unit to measure. More specifically, percentage and type of outstanding issues still to be closed out, e.g. are just minor issues being dealt with? The influence on decisions was seen as an indicator of success. It was suggested that evidence of an audit trail from issues being raised to final decisions could be part of a review. There is invariably someone within effective H&S committees who drives it and champions H&S. The personality of the individual is key. If someone is identified, to hold responsibility for the committee, he can be measured to ascertain the committee’s performance. Resources were discussed, as mentioned earlier regarding clients; the group acknowledged that support (such as administration) is required to assist the committee. The level of resources provided in relation to the size of the job could be measured.

## **6.3 Union Safety Representatives**

Discussion covered “soft” approaches, which have been successful in getting people involved in safety. Local Government have been seen to promote worker participation, however experience of main contractors and SME’s was far less evident. TU Training of Safety Representatives (SR’s) was seen as best practice. However the decline of TU membership in recent years has not helped. A team approach, (TU working in partnership with management) has been successful. This was recommended as a way forward.

In relation to barriers, the group identified migrant workers as a concern with regard to safety. The issue was raised the question “Do they need representation more than others?” Finance seemed relevant where SR’s are concerned, it was claimed that there is not enough money in budgets for SR’s. Union SR’s were seen as being somewhat exclusive. Responsibility for representation remaining with one person places more emphasis on the characteristics of that

individual. Some group members commented that combined approaches (TU and non-TU) tend to lead to conflict, due to potentially different objectives of each. Possible measures were not discussed by this group.

## **6.4 Direct Management approaches**

Training was discussed as a key issue, provision of information was agreed to be the first step to training and educating the workforce. The information needs to be relevant. It was agreed that a feedback loop, from operatives to managers, is required and a mechanism needs to be in place for this. This involves both the direct and indirect forms of communication and the means to act on it. Other issues included a demonstration of what is required; use of live case-studies has worked on previous projects; communication skills are essential for the delivery of any management lead initiative, an area commonly overlooked in construction. It was also suggested that there should be less use of jargon. Motivation of the workers was seen as essential, including use of incentives “carrots”.

Barriers discussed included workers reluctance to get involved in initiatives instigated by management; Trade Union suspicion of management lead initiatives; a blame culture where senior management and/or peers, who believe that programme and budget or cost are the main drivers for a project, rather than people issues; and traditional contracts that “normally assist in transferring the risk from the main employers (Client’s and Principal Contractor’s) to the sub and sub-sub contractors”.

Things to measure discussed by this group included testing the workers and their supervisors individually on the process through demonstrations, basic written tests or observations. Also, just as important, is measurement of senior management on their attitudes and values. ‘Whistle blowing’ safety failures reported by workers, was also discussed; although this has been known to fail in the past due to workers ‘staging’ an unsafe condition, in order to report it for praise or reward. Surveys were discussed, to survey and sample Communication, Consultation, Co-operation, Collaboration, Safety Climate, Safety Culture, Commitment, Competency, Control and Reporting, within all levels of the workforce. The group also agreed that feedback could be measured as an indicator of success, by measures of both quality and quantity.

## **6.5 Informal approaches**

Workers self ownership of H&S was identified by this group as helping them to be more proactive and get involved on interventions, with management merely providing support. Non-financial rewards were seen as a far better way of maintaining sustained performance. This should not be confused with ‘no financial commitment’ by management. In the case discussed financial support was given to reward favourite local charitable causes, in return for sustained H&S performance. Listening was seen as a key issue. Workers need managers to actively listen, understand and respond to what they are saying. This highlighted a need for “soft-skill” training for managers. Self policing or auditing, which is similar to self ownership, was seen as a good way of gaining worker commitment.

Barriers discussed by this group included reluctance of workers to get involved, possibly stemming from a ‘not my job’ attitude; suspicion of management having ulterior motives; and peer pressure from other workers unwilling to participate. Measures discussed by this group echoed those above.

## **6.6 Summary of workshop findings**

The findings from the industry workshop groups highlight both specific and generic issues. The specific issues have already been covered above; however, there are some obvious overarching issues that can be seen in the findings of each group.

Training will need to be part of any intervention. Specific reference has been made to ‘soft’ skills, which was addressed by including techniques such as asking open questions, using unthreatening language and spotting apprehension. Reference to communication skills and man-management skills was a feature of the management training exercise.

Suspicion and lack of trust of others, from all quarters, workers, management and trade unions, was clearly evident from the workshop findings. A challenge for the research team was how to create an open environment on the case study sites. This was addressed through initial meetings with key personnel from the industry partners to help ensure buy-in and leadership prior to implementation. The reluctance of some workers to be engaged also needed to be acknowledged. Although every effort must be made to allow workers to get involved it was made clear that no coercion should be used by management.

A key issue that every intervention package needed to address was the ability to facilitate two way communication. This was evidenced in the responses to ‘measures’ in particular the repeated reference to a need for recording numbers of worker suggestions, recommendations or general issues; and the number of responses by management, issues closed out or outstanding etc. Further, it was obvious that the type of issues, i.e. important or superficial, should be recorded.

## **6.7 Examples of industry good practice**

Representatives from ‘good practice’ organisations made presentations at the workshop and assisted the research team by explaining how they have improved worker engagement. Further information on the work done by these and other organisations can be found on the HSE website (HSE 2005). However the most salient points in relation to this study are discussed here to help understand what practical measures have been successful.

### **6.7.1 Heathrow Terminal 5**

The development of the new terminal 5 (T5) at Heathrow airport is seen by many as a unique, one-off ‘mega project’ and is therefore atypical of construction in the UK. However, good practice can still be transferred to other projects of a smaller scale. For example, the “Respect for People” principles (ConstructingExcellence 2005) have been implemented on sites at T5. These include specific health and safety measurements as well as a “workforce satisfaction” measure (*ibid*). Workforce satisfaction surveys can be seen as a form of direct communication. Inductions include a four hour session on the cultural change programme ‘Incident and Injury Free’ (IIF). This programme is not unique to T5 and has been used by other organisations. A key aspect of the programme is the participation of workers in H&S, including looking out for others and reporting unsafe conditions or near misses. In addition, supervisors are briefed on how to communicate with operatives in a non-threatening manner to encourage trust and openness. A no-blame learning approach to incident investigation is also adopted. Other worker engagement activities include daily briefings, tool-box talks, regular committees, a site news paper, an anonymous H&S telephone ‘hot-line’ and a demobilisation questionnaire for those leaving to ascertain reasons for leaving and any suggestions for improvement. T5 continues to achieve record breaking injury rates for the number of man-hours the site employs.

### **6.7.2 Channel Tunnel Rail Link**

Another large project is the channel tunnel rail link. Part of the ‘Target Zero Accidents’ strategy included daily meetings with workers, the ‘Safety Task Analysis Risk Reduction Talk’ (STARRT). This process was developed to not only inform workers of the hazards of each day’s work but to also encourage their participation. This is done in groups and involves the evaluation and feedback of the risk assessment and method statement. A key component of the briefing is the completion of the SARRT card. This card includes a review of the previous shift’s work and is an opportunity to report any problems, near misses or recommendations based on any learning experiences. The next section covers the shift to be done and includes a chance to comment on the existing control methods, equipment or environment. A checklist of main points to cover in the briefing is also printed on the card with a sign-off section for the workers. A final ‘catch-all’ section is included for workers to note anything they think is relevant. A training video is used to talk workers through this process and give examples. It is necessary to appoint a ‘STARRT champion’ to administer the process. This is generally the area’s health and safety manager. Their role is to collect and action the cards, report the findings at regular meetings, follow up actions and recommend rewards and incentives in recognition of the workers efforts. Near miss reporting has increased as a result of introducing the initiative and the AFR for the project is 0.18.

### **6.7.3 AMICUS Balfour Kilpatrick Initiative**

This initiative was set up at Balfour Kilpatrick’s Glasgow office. A programme was developed to encourage workers to take up the role of Safety Representative. Leadership was shown at a senior level as senior management met with AMICUS officials to give the programme its backing. AMICUS were able to secure 10 frontline workers to undertake SR training at their Glasgow office. The course covered SR duties, hazard identification and risk assessment, proactive and reactive risk management, accident investigation and workplace inspections. A key factor in the programme’s success was the endorsement of senior management. The programme was subsequently rolled out to the rest of the company’s workforce. Accident Frequency Rates since then have fallen from 0.57 in 2003 to 0.29 in 2004. Creating more safety representatives has no doubt contributed to this successful drop in accidents.

### **6.7.4 Barhale Construction**

Barhale construction is a multidisciplinary engineering contractor with a regional structure. The company wanted to improve on their AFR of 1.6 whilst maintain steady growth of the business. Therefore, their strategy to achieve this included targeting front line workers. Daily ‘breakfast briefings’ were held to discuss the day’s health and safety issues. This was accompanied by a briefing card for workers to complete and included a check list. A regular safety news letter entitled ‘Safety Focus’ was distributed to workers showing good and bad practice. They also took the unusual step of appointing ‘Safety Coaches’. These were senior workers who had extensive site experience. They were given health and safety training then allowed to roam from site to site giving advice to other workers and correcting unsafe behaviour. The interesting aspect of this role was that the safety coaches did not report to management but were there solely as a resource for the workers. Within two years there was an initial drop in the company’s AFR to 0.16. However, a recent increase to 0.35 has caused them think more about their lack of reporting near misses and unsafe conditions. Therefore this has become their next area to target.

### **6.7.5 DWP Jobcentre Plus Rollout Programme**

When the Department for Work and Pensions commissioned the refurbishment of their Jobcentre offices throughout the UK they wanted to deliver the programme using best practice approaches to construction procurement as laid down in Office for Government Commerce guidance (OGC 2004). This involved seconding individuals into an integrated project team using a ‘Gateway’ approach to managing the programme of works (Cameron *et*

*al.* 2004). The project is now used as a ‘best practice’ example for both government and private practice for Environmental, Health and Safety (EHS) management.

The strategy, developed by the national EHS manager<sup>4</sup>, incorporated various elements in relation to worker engagement. The project utilised elements within all five of the ‘Respect for People’ toolkits (ConstructingExcellence 2005). In addition to this it was mandatory for every worker and client’s project staff to pass a one day behavioural safety training course titled ‘Achieving Behavioural Change (ABC) for Incident Injury Free (IIF)’ which became their ‘Passport’ to enter site. This was based on the Bovis Lend Lease / JMJ initiative (IIF) and was used as a vehicle for promoting a positive culture conducive to safe and healthy working on all of the projects. On completion of the course everyone was issued with a personal ID card. The card included an impartial health and safety telephone number for workers to call, should they wish to seek help and advice or report a problem. In addition to this the workers also received a STAARR (Stop, Think, Act, Assess, Report and Review) and TASK (Think safety, Act safe, Stop if hazardous, Keep safe) risk assessment booklet. These were used daily by workers. Accident and near miss reporting were mandatory and, as such rewarded, to allow contractors to learn from their experiences. This could only be achieved through both worker and site management buy-in to develop trust. Ongoing assessment of EHS performance was also measured via site audits conducted by regional EHS co-ordinators (combined EHS advisor and planning supervisor/CDM co-ordinator) who were also seconded to the client’s project team (Peckitt and Coppin 2005, Smith 2005). Auditing records and procedures as well as inspection of the physical sites allowed the client to benchmark each contractor’s project sites on EHS including those relevant to worker engagement. The benchmark measures were, in turn, linked to contractor’s incentive/bonus payments. This gave the contracting organisations, working on site, a clear motivational reason to perform well.

Even with a rigorous reporting regime, that rewards reporting and penalises non-reporting of accidents, over the course of the total project’s life the Annual Incident Rate (AIR) has fallen from 1145 (2001/02) to 171.5 (2004/05). At the time of writing the rate stands at 93.58

The sub-sector of office refurbishment was chosen for case study sites within this study as discussed in Section 6.8. Therefore, further investigation of the DWP methods was conducted during the fieldwork to complement the data obtained. The findings from these site visits are discussed in Section 7.

### **6.7.6 MACE Ltd**

Project management company MACE Ltd set a strong worker engagement strategy during the building of the Royal Bank of Scotland headquarters in Edinburgh. Project Director, Richard Thorpe, led the scheme to ensure workers were respected on site. As a former joiner Richard knew how difficult life on site can be. He therefore convinced the client to invest in exceptional welfare facilities, appointed a full-time UCATT convener and provided literature, IT and numeracy training for site workers. Being a hands-on project director he regularly engaged workers direct during ‘street meetings’ on site. This built a level of trust and confidence to ensure safety performance was 11 times the industry average.

MACE also facilitated access to workers for previous research on worker participation (Maloney 2003) where it was found that workers were fully capable of addressing tasks, hazards, and risks, but were not accustomed to working with a formal paperwork exercise to do this. The previous involvement in research in this area and the commitment to worker engagement made MACE an excellent project partner for the current study.

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<sup>4</sup> Stephen Coppin, now Head of EHS for Lend Lease Projects

## **6.8 Fieldwork methodology**

The literature review and synthesis, together with the outputs of the workshop, held in September 2005, revealed two critical results of effective of worker engagement. First, was its impact on ‘meaningful communication’, particularly the encouragement of bottom-up as well as top-down communication; and second, its influence on ‘decisions’ made by both management and workers. Therefore, approaches implemented in relation to objective 5 incorporated the ability to satisfy at least these two critical measures of effectiveness. Based on this, as well as what was considered practically achievable within the project timeframe, four combinations of worker engagement processes were selected for implementation in the fieldwork case studies. These were:

5. Pre-task briefings with feedback cards
6. Suggestion schemes with safety circles
7. Informal approach using ‘safety champions’
8. Safety representative with H&S committee

**Pre task briefings** involved site management reviewing the work to be done for each shift and discussing relevant health and safety points. Feedback cards were given to workers to gain views on any issues they wished to raise. The cards were split into three broad areas: issues arising from the previous shift; issues in relation to the current shift; and any planning issues for the week ahead.

**Suggestion boxes** were placed in conspicuous areas to allow workers to give their views. In addition to this safety circles were set up on the site. These were made up of workers, for the specific purpose of identifying and solving any safety problems as well as assisting site management in dissemination of H&S information. Any recommendations from the boxes also fed into the safety circle.

**Informal approaches** involved the site manager walking around the site at least once a shift with a diary to record health and safety items discussed with workers. An informal ‘safety champion’ was asked to fulfil a similar role from the worker’s perspective. He also carried a diary.

**The safety representative and health & safety committee** is the traditional approach to worker consultation, embraced and supported by the construction Trades Unions. This was a difficult approach to implement as there were no contractors available to the study with Trade Union workers. In addition to this, no workers volunteered to undertake the role of safety representative. This approach was accommodated via a similar sized contractor, i.e. scope, specialising in refurbishment work, who had just begun training one of their workers to become a Safety Representative. Therefore this approach was not designed and introduced by the research team, but its effect was measured in the same way as the other approaches.

All approaches incorporated an “action list” that was used to record issues raised and track whether they were closed out satisfactorily (Appendix I).

## 6.8.1 Implementation

The fieldwork involved the implementation of the first three worker engagement approaches in individual projects of a major bank refurbishment programme facilitated by MACE Ltd. Approach number 4 (safety representative) was implemented separately under the guidance of a Trade Union Safety Adviser. The safety representative also received appropriate Trade Union training. Although this particular approach has not been designed by the research team its effectiveness was measured in the same way, i.e. before and after questionnaires and follow-up interviews.

Eight contractors from the bank projects identified sites for interventions (Appendix II). Interaction with the contractors' workers (staff and sub-contractors) consisted of five activities:

1. A short introduction on the approach to be used;
2. Implementation of the approach, by contractor staff;
3. Maintenance, by staff, of the specified form of worker participation during the implementation period;
4. "Before and after" questionnaires of workers and managers, to determine perceptions of the worker engagement safety programme and its impact on a variety of health and safety issues (see Appendix III & IV);
5. Discussion of safety performance.

**Training programme:** The training in the approach to be used was given by a member of the research team to the site management team (see Appendix V). This initial training involved demonstrations of the approach and materials to be used along with guidance on what issues should constitute meaningful engagement.

**Implementation:** Management made arrangements for implementing the approach. This was part of the initiation of normal site safety systems and did not require significant additional duties. The manager responsible for site inductions introduced the approach to new workers as part of each site induction meeting. Communication of the instructions to workers, specific to the intervention, was reinforced by an A4 information sheet.

**Worker participation:** The actual participation by workers during the course of each project was tailored to integrate with normal worker communication. The safety input did not normally require more than a few minutes, at regular intervals, the content depending on the approach used.

**'Before' and 'After' questionnaires:** These covered perceptions of the workers before and after the intervention. Workers completed a questionnaire at the beginning of the induction, and then again, sometime after exposure to the new approach (see Appendix III & IV).

**Discussion of safety performance:** Records of safety performance were collected to test whether there has been any direct impact of the intervention on site safety. A final close-out meeting with each site manager, to discuss the overall impact of the intervention, was also held.

### **6.8.2 Limitations**

Quasi-experiments, such as this, in applied settings differ from true experiments in two ways. Firstly, the groups have not been randomly assigned, but already exist. Secondly, it is virtually impossible to control for other factors (McQueen and Knussen 2002).

Leik (1997) suggests that a variety of reasons, other than the experimental treatment, can cause change: historical factors, such as supervisory change; Hawthorne effects, short term behaviour change as a result of being observed; passage of time, which means that one becomes acclimatised to the work; abnormal pre-test scores, which means that scores naturally move towards average scores; observer drift, systematic changes in the accuracy of measurements; false shifts, which implies that changes recorded by the measure fail to reflect reality; and failure to test the theory, which means that treatments were actually the same across all phases of the experiment. These pseudo-shifts represent internal validity threats.

Therefore, one must be conscious of such potentially confounding factors when designing experiments and take steps to ensure that an appropriate design is identified to protect internal validity and thus allow identified cause-effect relationships to be offered with confidence. If one conducts a series of like experiments and performance improves in time with the application of the treatment across all projects, then one could state with reasonable confidence that improvements were due to the experiment and not extraneous factors. Therefore, each intervention designed for the study was implemented on either two or three sites to improve internal validity (with the exception of approach 4), although it is acknowledged that this does not totally eradicate the problem. However, this was deemed an acceptable trade-off in favour of rich 'real-life' data obtained.

## 7.0 RESULTS, ANALYSIS AND DISCUSSION

### 7.1 Pre-task briefings with worker feedback cards

The 'pre-task briefings with worker feedback cards' approach was implemented on three sites. These were perceived by the workers who used them as useful visual reminders: "it's good to have it in your pocket if you need it". However, not many cards were returned completed by the sites using them (3 completed cards returned in total). Those that were completed included two references to welfare issues, "toilet rolls out" and "toilet needing cleaned". One site included a note from a worker about suspected asbestos. All items listed related to site issues. No cards directly mentioned planning or management issues.

Problem issues reported by interviewees included the time needed to complete the cards. All mentioned that they normally discuss any issues face to face due to the working relationship with the site manager: "If I have a problem I just tell him" and "I just want to get in, get the job done, and get out". Despite this the workers interviewed all appreciated the effort being made during the intervention: "if it improves safety then we should give it a go". The three site managers from each site agreed that the workers were reluctant to complete the cards, but the pre-shift briefings were a good way to discuss issues. These were informal, undertaken just prior to or on commencement of each shift.

Two of the site managers viewed the cards, overall, as positive and had positive attitudes to the intervention in general. The third site manager viewed them positively but complained that the workers were uncooperative when trying to implement them. Workers on this site were predominately sub-contractors. This remaining site had a low return of questionnaires (8 in total). Questionnaires for this site also showed the lowest count of workers with formal H&S training (20%) compared to the other two sites (45% & 70%), see Appendix VI.

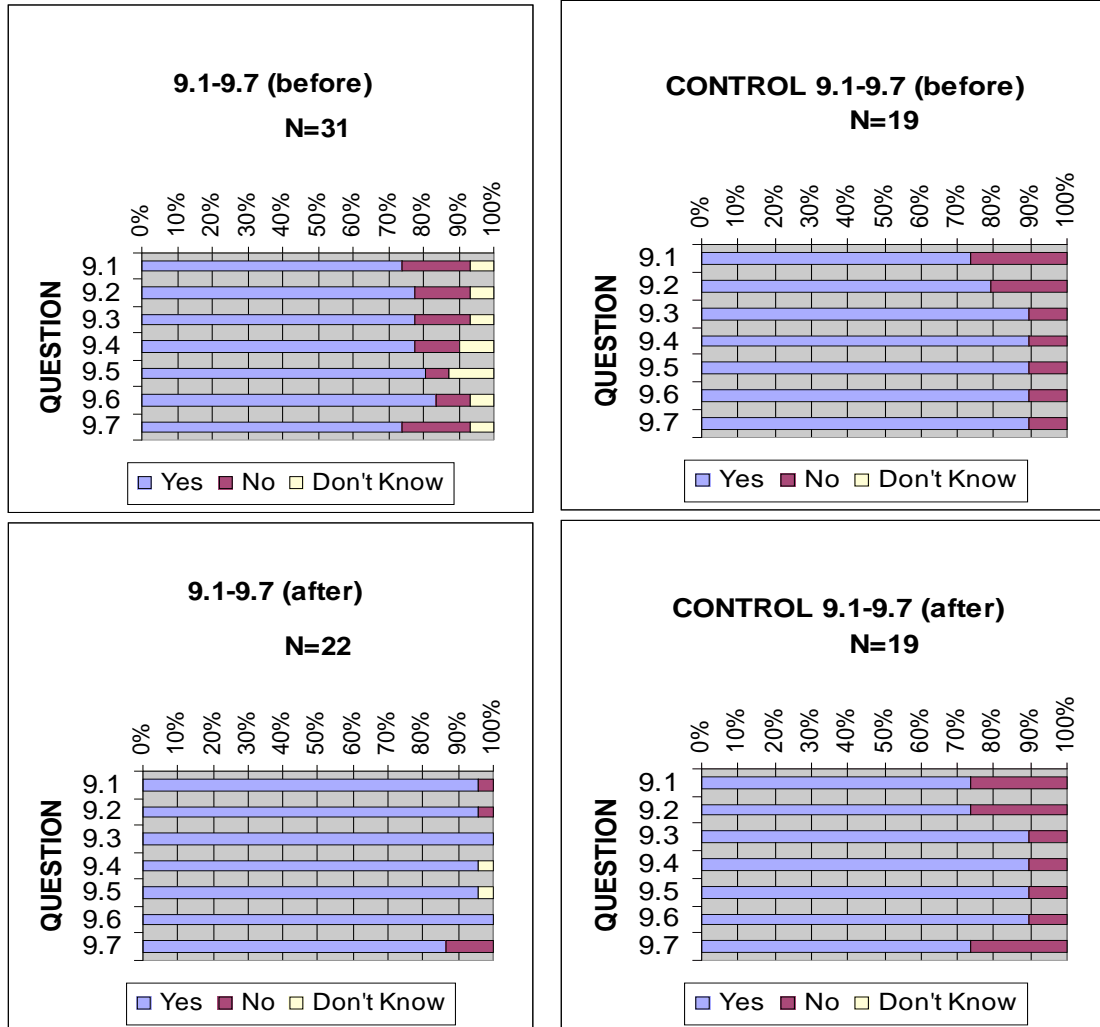
Noticeable shifts in opinion, shown in the questionnaires, were in response to workers perception of: opportunities to express their views (Sub-questions 9); and whether worker engagement on the site could be improved (Question 14). Figures 5 and 6 show the combined responses from all three sites to these questions. No other questions revealed noticeable changes.

Figure 5 shows the 'before' and 'after' responses to the questions in sub-section 9, 'opportunities to give your views'. Before the intervention the majority of respondents (around 80% in each case) indicated that they thought they were given the opportunity to express their views with respect to the issues shown in Figure 5, with the remainder being split between 'no' and 'don't know'. After the intervention those who replied 'yes' account for around 90% of respondents, with question 9.3 (procedures for reporting accidents and ill health) and 9.6 (site rules) at 100% 'yes'. Little change was seen regarding sub-question 9.7 (the way your work gets done). No noticeable change was observed on the control site questionnaires regarding the same issues.

With regard to question 14 (can worker engagement be improved?) no clear answer stands out before. However, after the intervention the majority of respondents (64%) thought worker engagement on site could not be improved. This question was originally included to encourage respondents to recommend improvements in a subsequent *open* question; however, the change in perception is noticeable when comparing before with after. No noticeable change was observed on the control site responses regarding this question.

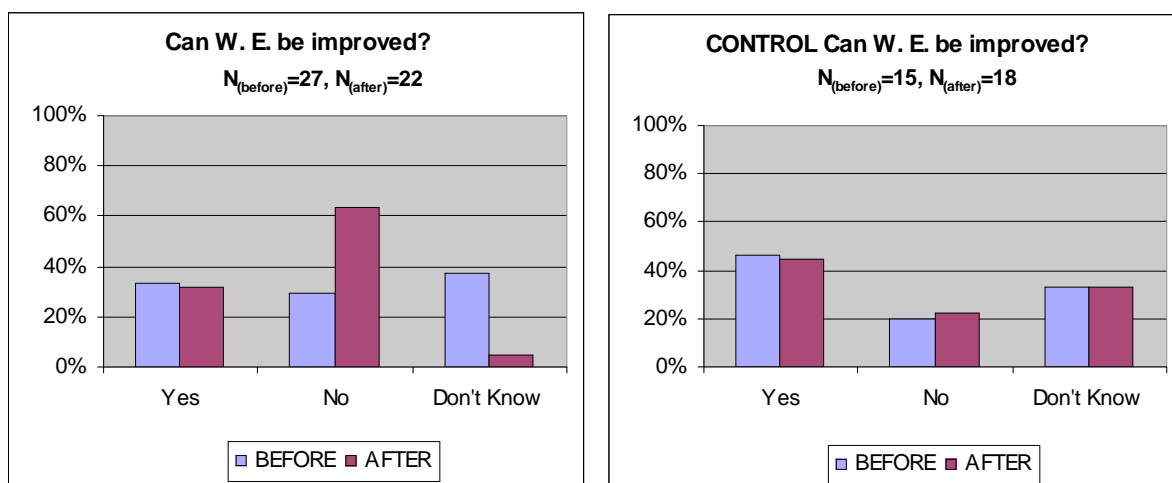
### CASE STUDY SITES

### CONTROL SITES



Does management give you the opportunity to give your views on:	
9.1	H&S Policy (input to its development or changes)
9.2	Risk Assessment (help in doing it/make comments)
9.3	Procedures for reporting accidents / ill health
9.4	Changes to work/equipment affecting H&S
9.5	H&S problems that exist on the site or near misses
9.6	Site rules
9.7	The way your work gets done

Figure 5 Pre-task briefings with worker feedback cards (Q9 – subsections)



**Figure 6 Pre-task briefings with worker feedback cards (Q14)**

## 7.2 Suggestion schemes with safety circles

Suggestion schemes and safety circles were implemented on two sites. This approach allowed workers to recommend solutions to problems. For example storage of materials was a problem identified on one of the sites. This had logistical and safety implications. The safety circle group explored various ideas, including seeking temporary storage close to the site and even using their own vans. Although the problem was not totally resolved it has been taken to the client for consideration on future projects.

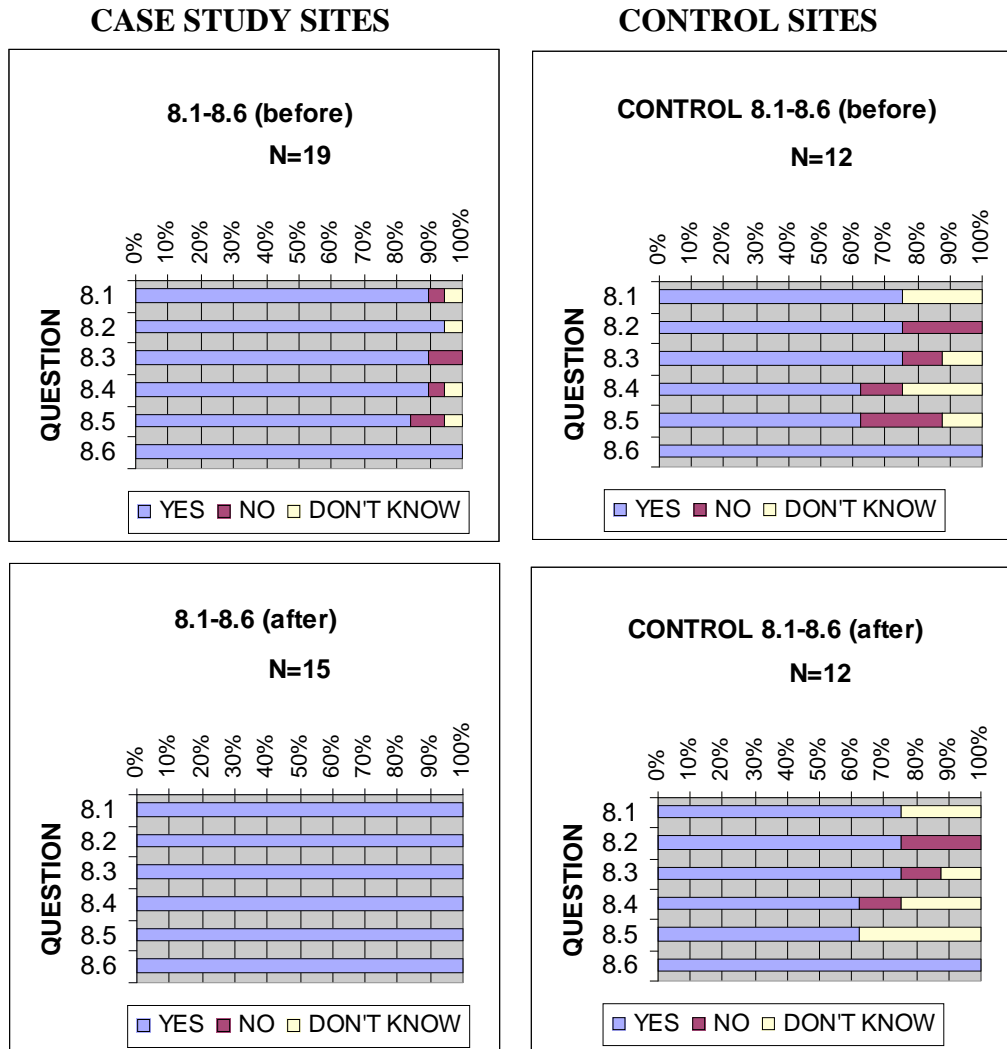
Unfortunately, no suggestion forms were returned by workers on these sites. The reasons given for this were similar to the issue with the feedback cards: time to write out the forms. Daily oral communication was deemed to be sufficient “I see the site foreman every day, I don’t need to fill a form in to tell him something”. Therefore, the suggestion form was seen as an extra layer of bureaucracy and direct communication was preferred.

One of the two site managers from each site viewed the suggestion box positively. However, the other was negative about the approach: “no one will use the box, they’re not interested”. Despite this, some workers interviewed on the ‘negative’ site showed interest when interviewed “I like it when they [management] take an interest in what we have to say”, although participation in the safety circle group on this site was poor. Levels of formal H&S training recorded on questionnaires on both the positive and negative sites were much the same, with the positive site being slightly more (55%), compared to the negative site (45%).

Noticeable shifts in opinion, shown in the questionnaires, were in response to workers perception of: management’s provision of information (Sub-questions 8); opportunities to express their views (Sub-questions 9); and whether worker engagement on the site could be improved (Question 14). Figures 7, 8 and 9 show the combined responses from both sites to these questions. No other questions revealed noticeable changes.

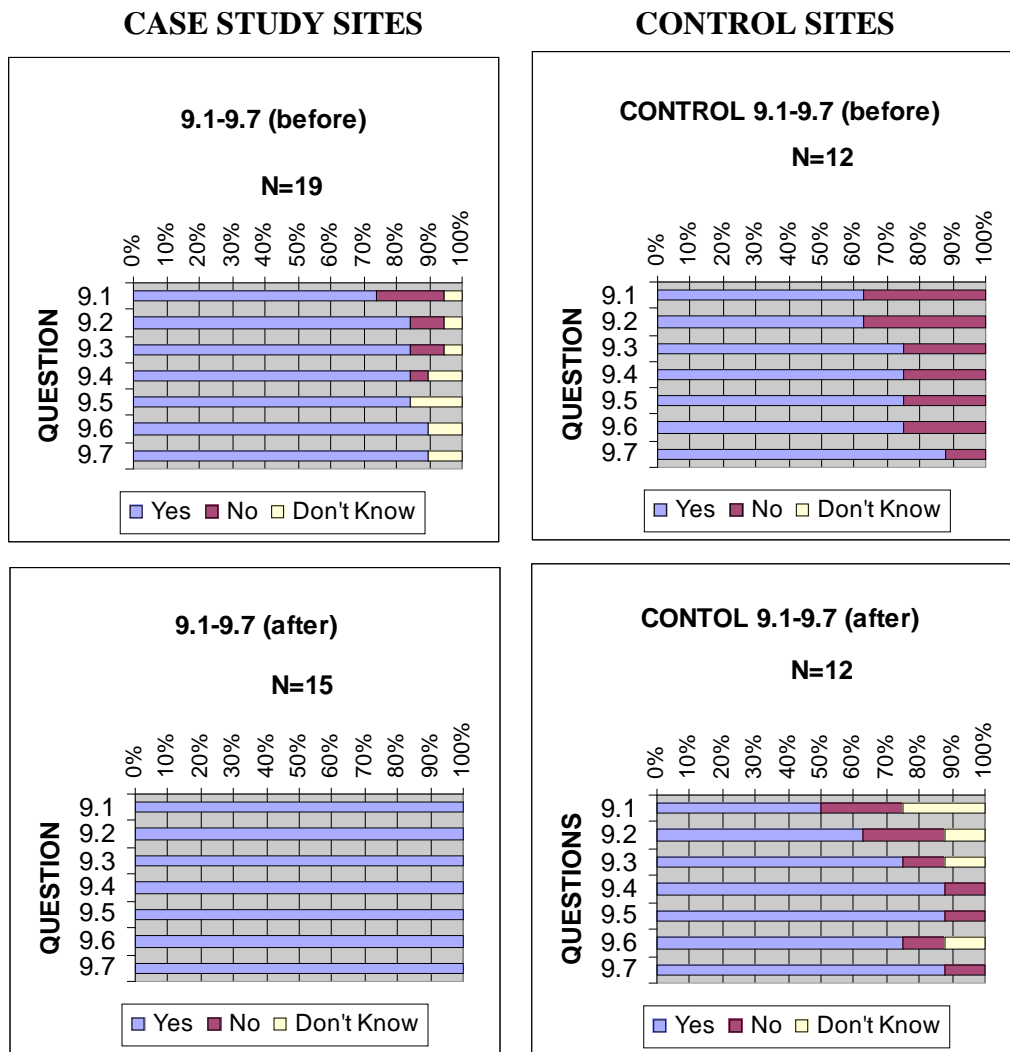
Figure 7 shows the ‘before’ and ‘after’ responses to the questions in sub-section 8, ‘management’s provision of information’. Before the intervention the majority of respondents (between 80% and 90% in each case) indicated that they thought they were given appropriate H&S information with respect to the issues shown in Figure 7. Sub-question 8.6 (what to do

in an emergency) shows 100% 'yes', indicating all respondents thought that this information was provided by management. The remainder of responses were split between 'no' and 'don't know'. After the intervention 100% of respondents replied 'yes'. No such change was observed on the control site questionnaires.



Does management inform you about:	
8.1	H&S Policy (what senior management say about H&S)
8.2	Risk Assessment (via Method Statement etc.)
8.3	Procedures for reporting accidents / ill health (e.g. accident book, who to inform)
8.4	Changes to work that affect H&S
8.5	H&S Performance (e.g. lowest accident rates)
8.6	What to do in an emergency

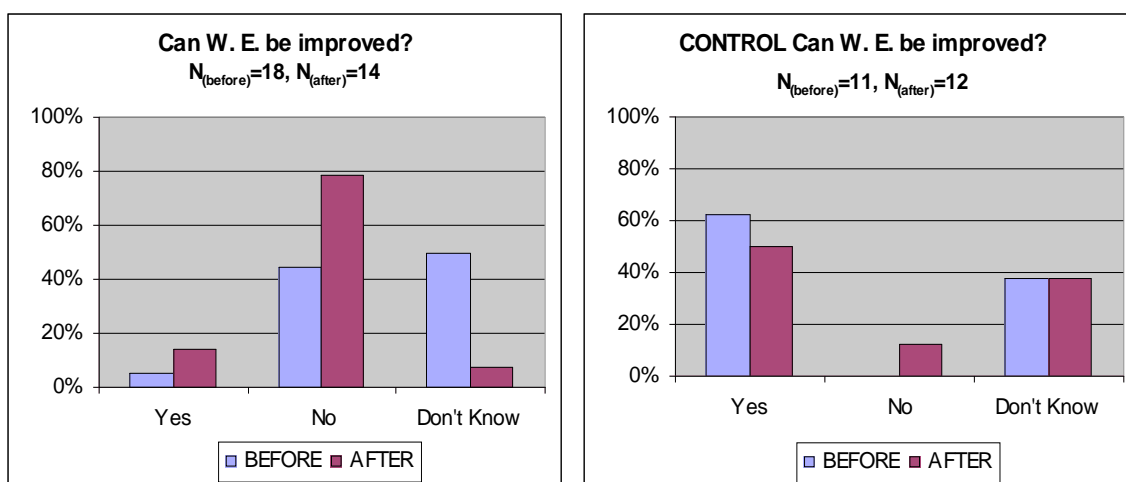
**Figure 7 Suggestion schemes and safety circles (Q8 – subsections)**



Does management give you the opportunity to give your views on:	
9.1	H&S Policy (input to its development or changes)
9.2	Risk Assessment (help in doing it/make comments)
9.3	Procedures for reporting accidents / ill health
9.4	Changes to work/equipment affecting H&S
9.5	H&S problems that exist on the site or near misses
9.6	Site rules
9.7	The way your work gets done

**Figure 8 Suggestion schemes and safety circles (Q9 – subsections)**

Figure 8 shows the ‘before’ and ‘after’ responses to the questions in sub-section 9, ‘opportunities to give your views’. Before the intervention the majority of respondents (between 70% and 90% in each case) indicated that they thought they were given the opportunity to express their views with respect to the issues shown in Figure 8, with the remainder being split between ‘no’ and ‘don’t know’. After the intervention all those who replied answered ‘yes’, repeating the trend shown in sub-section 8. No noticeable change was observed on the control site questionnaires regarding the same issues.



**Figure 9 Suggestion schemes with safety circles (Q14)**

The only other major shift in opinion shown in the questionnaires was in response to workers perception of whether worker engagement on the site could be improved (question 14). Figure 9 shows the combined responses from both sites to this question. Prior to the intervention answers were split between ‘no’ and ‘don’t know’, however, after the intervention the majority of respondents (79%) thought worker engagement on site could not be improved. This change mirrors the graph shown for ‘pre-task briefings with worker feedback cards’ in Figure 6. No noticeable change was observed on the control site responses regarding this question.

### **7.3 Informal approach using ‘safety champions’**

Informal approaches were implemented on three sites, although only two of these sites also tried to develop the informal ‘safety champion’ role. This approach allowed the site managers to incorporate methods of communication within their day to day routine. Issues discussed during these walks around site included communication of hazards uncovered, such as “suspicious looking electrical wiring in a wall”, feedback to help with monitoring of work with vibrating hand tools (with regard to control of noise and vibration regulations), and difficulties reported with new or novel equipment.

The diary provided a handy way of capturing this information. However, the safety champions, who were site workers, were less willing to complete them. One site manager remarked that he suspected the worker he asked to be a safety champion may have been dyslexic.

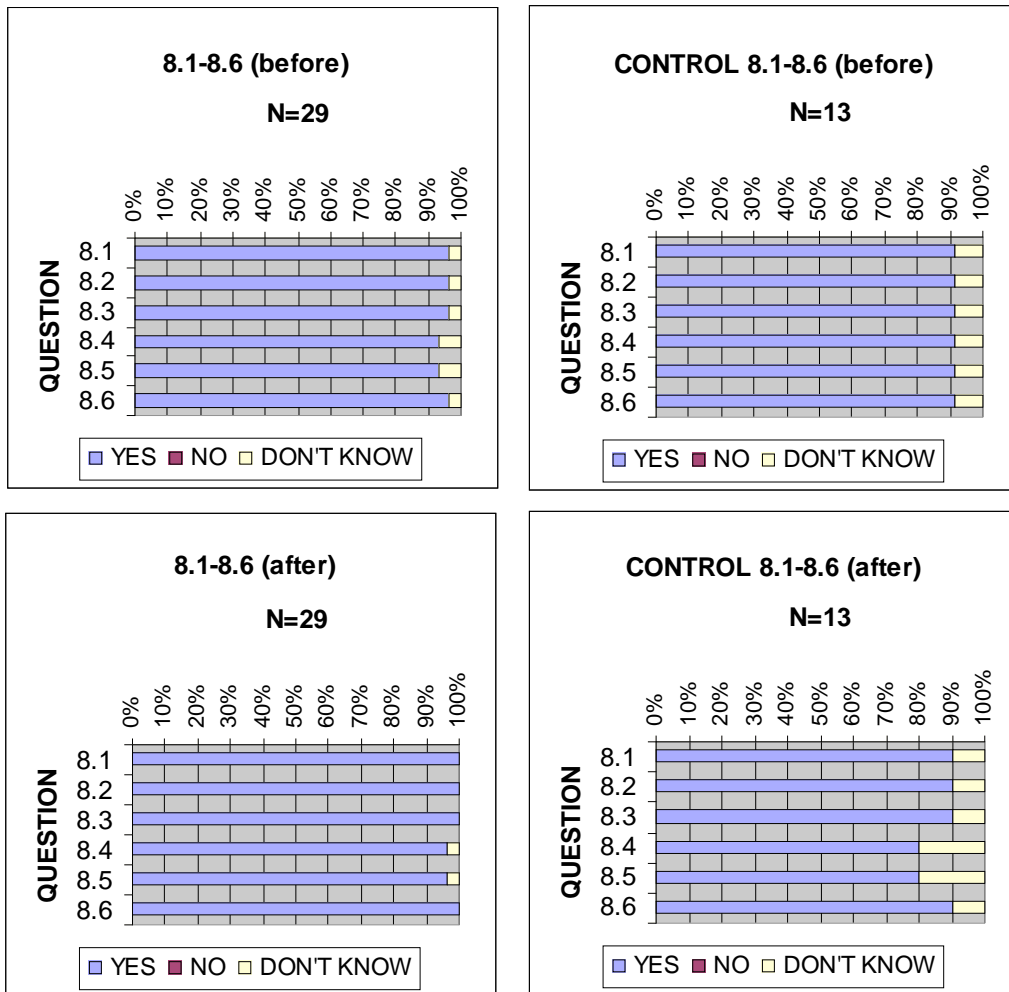
All three site managers viewed the approach positively. The site diary was completed by the site manager rather than the workers. These diaries contained a substantial amount of information, capturing important conversations with workers about H&S which would have otherwise been lost. Relatively low counts of formal H&S training were reported in the questionnaires (30%, 20%, & 50% respectively). All of the issues discussed related to site; and no planning or management issues were discussed. The site diaries also contained several references to conversations where site managers were correcting unsafe behaviour: “plumber

started brazing without hot-works permit. Stopped him and asked why, and was told he couldn't find me”.

The questionnaires showed a shift in perception regarding management’s provision of information (Sub-questions 8); and whether worker engagement on the site could be improved (Question 14).

**CASE STUDY SITES**

**CONTROL SITES**



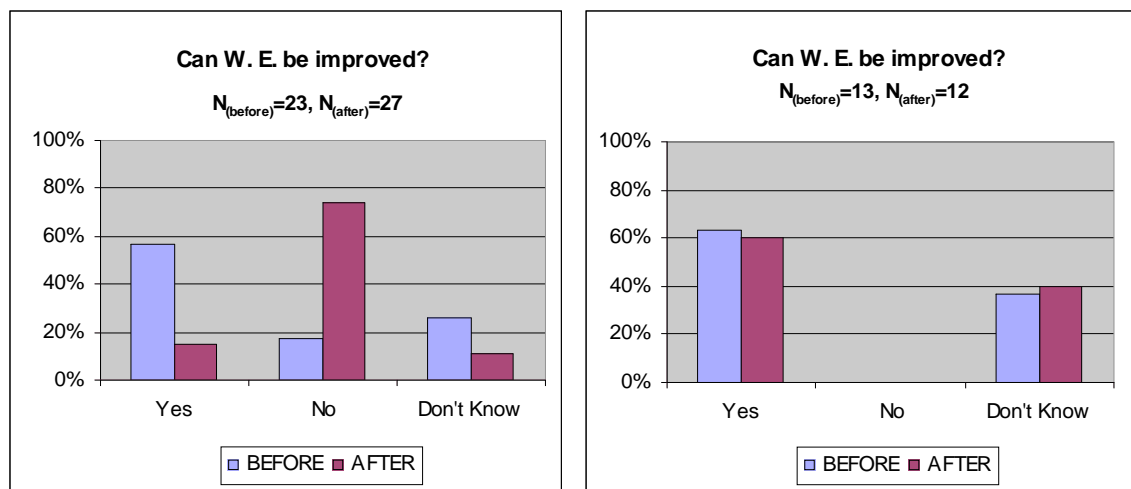
Does management inform you about:	
8.1	H&S Policy (what senior management say about H&S)
8.2	Risk Assessment (via Method Statement etc.)
8.3	Procedures for reporting accidents / ill health (e.g. accident book, who to inform)
8.4	Changes to work that affect H&S
8.5	H&S Performance (e.g. lowest accident rates)
8.6	What to do in an emergency

**Figure 10 Informal with ‘safety champions’ (Q8 – subsections)**

Figure 10 shows the ‘before’ and ‘after’ responses to the questions in sub-section 8, ‘management’s provision of information’. Before the intervention over 90% of respondents

already indicated that they thought they were given appropriate H&S information with respect to the issues shown in Figure 10. After the intervention 100% replied 'yes', with the exception of 8.4 (changes to work) and 8.5 (H&S performance). No noticeable such change was observed on the control site questionnaires.

The only other major shift in opinion shown in the questionnaires was in response to workers perception of whether worker engagement on the site could be improved (question 14). Figure 11 shows the combined responses from all three sites to this question. Prior to the intervention answers were split between 'no' and 'don't know', however, after the intervention the majority of respondents (74%) thought worker engagement on site could not be improved. This change mirrors the graphs shown in Figure 6 and Figure 9. Again, no noticeable such change was observed on the control site.



**Figure 11 Informal approach using 'safety champions' (Q14)**

## 7.4 Safety representatives and safety committees

The safety representative and committee approach could not be implemented on any sites. This was due to lack of volunteers willing to become trained safety representatives. This in itself is probably an indication of the difficulties to be faced when trying to implement this approach in construction. Fortunately, a contractor was found, via UCATT, which satisfied the criteria required for the research. This contractor specialised in refurbishments of a similar size to the sites being studied. Although this contractor was external to the selected programme of works it was deemed a suitable compromise under the circumstances.

The safety representative took up his post after receiving his training: a TUC 'Health and Safety Representatives' 10 day course. Rather than being on one permanent site the safety representative moved from site to site, dictated by the contractor's workload and available resources. Communication between the safety representative and the workers has been on an informal basis and predominantly with direct employees rather than other subcontractors, although it was expected that more sub-contract workers would become involved as the safety representative became established. Issues discussed with workers consisted of requests for PPE, e.g. requests for gloves and new boots. Workers also raised issues surrounding pay and employment terms and conditions. As 'pay and conditions' is outside the remit of the safety representative the workers were advised of who they could consult regarding such issues and the functions of the safety representative were reaffirmed to prevent any further confusion.

This point highlights possible misunderstandings that can arise when trade union safety representatives are introduced, which may prevent their success or even their implementation in the first place.

The safety representative commented that workers on the sites he had worked on, since taking up his new post, were far more safety conscious “the guys wear their gloves and boots all the time when I’m there, they’re even more aware of hazards”. The mere presence of a safety representative on site would seem to have an effect on others. This was confirmed by one of the contractor’s site managers “the lads have benefited from the advice from [the safety representative] and they’re taking it on board”. However, no inroads had been made to discuss management or policy issues. The safety representative advised that he had held discussions with the contractor’s safety manager and hoped to create a formal safety committee. It was therefore too early to draw any other conclusions about this approach.

Questionnaires were issued before and after the training period of the safety representative. The movement of the safety representative between sites meant ‘after’ questionnaires needed to be labelled for those who had worked with the safety representative on sites (indicated by a ‘yes’) and those who had not (indicated by a ‘no’). Those returned ‘no’ could therefore be treated as the ‘control’. Unfortunately, only questionnaires marked ‘no’ were returned. Efforts were made to obtain further questionnaires but these proved unsuccessful. Therefore, no meaningful questionnaire data could be collected for this intervention as the only ‘after’ data was from workers who had not worked with the safety representative. This shows a potential difficulty when the influence of the safety representative is limited by the confines of the site he is working on.

## **7.5 Other site visits**

Examples of industry good practice were discussed in Section 6.7. Section 6.7.5 (refurbishment of job centres) provided the research team with an opportunity to investigate good practice initiatives in the same sub-sector as the case study sites. This allowed for some comparisons to be made. The main initiatives discussed in 6.7.5 are summarised below.

The Department for Work and Pensions (DWP) used an integrated team for the refurbishment and extension work of the existing occupied premises for the new Jobcentres throughout the UK (known as Job Centre Plus / JCP). The strategy, developed by the national EHS manager, incorporated various elements in relation to worker engagement. This included a ‘Passport’ safety training induction course which incorporated elements from a behavioural programme called Incident and Injury Free (see Section 6.7.5).

On completion of the course everyone was issued with a personal ID card which included an impartial health and safety telephone number for workers to call for help and advice or report a problem. In addition to this the workers also received a STAARR (Stop, Think, Act, Assess, Report and Review) and TASK (Think safety, Act safe, Stop if hazardous, Keep safe) risk assessment booklet which were used daily by workers. Accident reporting and near misses were encouraged and ongoing assessment of EHS performance was also measured via site audits. Auditing records and procedures as well as inspection of the sites allowed the client to benchmark each contractor’s project on EHS and was linked to contractor’s incentive/bonus payments. This gave the contracting organisations a clear motivational reason to perform well and apply good practice approaches in relation to worker engagement. This, in turn, has reduced accidents and incidents on the programme to a level well below the average for the fit-out/refurbishment sector of the industry.

Two DWP sites were visited to interview workers. The purpose of these interviews was to gain an understanding of the initiatives mentioned above from the workers perspective. A total of six workers were interviewed, three from each site, and the site manager from each.

The main purpose of the mandatory ABC/IIF training programme was to convey a client and management's desire to create a healthy and safe culture as well as provide the workers with statutory health and safety information. The workers interviewed had a mixed response to the course. Four found it useful, however, one thought it was too long and the other thought it was a waste of time. It was worth noting that these last two interviewees stated that they had previous similar training elsewhere. Therefore, they felt that they were going over old ground. Both site managers stated that workers also underwent site inductions (shorter in duration and site specific) in addition to the Passport course. These inductions provided good opportunities to gain feedback on what workers thought of the course.

The help-line telephone number was seen as a good idea by all interviewees. However, only two of them actually knew it existed, despite it being printed on their ID cards. Neither of these two interviewees had felt the need to call the number. It is fair to say that this was probably due to the level of safety and welfare being above that seen by them on similar sites elsewhere.

No extensive use of the STARR or TASK cards were mentioned by interviewees. However, site specific risk assessments and method statements were discussed on site and workers had the opportunity at this point to comment on the planned methods and work equipment to be used (such as platforms in place of step ladders). One interviewee commented that they had recommended altering a method statement that was too vague. Another stated they had challenged a risk assessment that was "over the top". When asked for further information the worker explained that there was a requirement to wear gloves to do a delicate job that made it impractical. A solution was found that used different gloves. These examples demonstrate how informal feedback was used to alter and refine a generic risk assessment and method statement.

A key aspect of the site audit, in relation to workers views, was the requirement to obtain workers opinions of their site managers/supervisors. All six workers were aware of this and four had given feedback to area DWP/JCP local EHS co-ordinators. In all cases this feedback was positive.

Both these sites were managed by the same contractor. One aspect of the worker engagement initiatives being implemented on these sites was the development of a health and safety committee, although this was only for direct employees of the contractor. One of the site managers discussed how new entrants to the company were encouraged to spend some time on the committee in order to comment or bring new ideas. A further follow-up interview with the contractor's health and safety manager uncovered some interesting points. Firstly, the health and safety manager had taken about three years to develop the committee and win the workers trust. Secondly, he thought a key turning point was removing line managers from the committee and replacing them with frontline workers. The safety manager then became the main line of communication between workers and managers. The health and safety manager was of the opinion that this allowed the workers on the committee to become more relaxed and less apprehensive about discussing workers views on health and safety.

Overall, the combination of the open culture developed on the DWP/JCP job centre programme, coupled with the contractor's own initiatives to involve workers in health and safety, has made worker engagement on these sites a success.

## **7.6 Discussion**

In general terms all the approaches have raised awareness amongst workers and indicated to them that their views are worth stating.

From the workers perspective, a theme that was evident from the findings was their reluctance to write anything on paper. Face to face communication has been favoured. This may in fact reflect a problem of literacy levels, common to the industry. Therefore the pre-start briefings, safety circles and informal conversations all promoted more two-way (oral) communication. Informal lines of communication have been found to influence higher safety performance in other studies (McDonald and Hyrmak 2002).

The impact of formal H&S training has affected the types of issues discussed. Case study sites with the majority of workers' questionnaires indicating formal training coincided with discussions about issues beyond the site, dealing with planning, scheduling and management issues (see Appendix VI). This re-emphasises the significance of training.

There were a number of issues covered by the questionnaire (Appendix III). However, only three areas showed any change in responses subsequent to the interventions (see Appendix IV). Two of these were sub-sections 8 and 9, in relation to provision of information and opportunities to express views respectively. The third area where a change in perception was observed was in response to question 14: can worker engagement on this site be improved? In general, the questionnaires issued before the interventions returned very positive results, which reduced the opportunity for improvement. Therefore, in retrospect, few changes were expected.

With regard to management's provision of H&S information, sites implementing the 'suggestion schemes and safety circles' approach showed a perceived improvement. A similar improvement was also seen on sites implementing the 'informal with safety champions' approach. No similar change was seen on the control sites. Interviews with workers on the sites implementing suggestion schemes and safety circles showed that they appreciated the safety circle meetings which could explain why an improvement was seen here. Regular meetings would obviously provide an opportunity for management to explain any changes or new H&S specific issues. It was interesting to note that the same improvement was achieved using the informal approach. Asking site managers to include H&S issues in site conversations may have been a simple and effective strategy with respect to improving the provision of information.

The second area of changed perceptions, that of opportunities to express views, was seen on sites implementing the 'pre-task briefings with feedback cards'. Sites implementing 'suggestion schemes and safety circles' also showed a similar improvement. No similar change was seen on the control sites. This finding would seem to conflict with the lack of completed feedback cards and recommendation forms. However, it may be that these tools provided a visual reminder for workers which may have influenced their perceptions when completing the questionnaires. The existence of feedback cards does, however, make it difficult for workers to deny the opportunity to express views, even though they do not avail themselves of the opportunity. The fact that they do not may be due to a lack of literacy skills, a deficiency that is often difficult and embarrassing to admit. Therefore, these strategies may look useful despite not actually providing much evidence of effectiveness; and, worse, could provide a means of fulfilling the letter, rather than the spirit, of laws requiring worker consultation.

The only consistent change in response seen across all approaches was in relation to perceptions of how well worker engagement has been managed on site and if it could be

improved. It is reasonable to assume that many of the workers completing the questionnaires for the first time were not sure how to answer the question. However, after exposure to the intervention approach and the site manager explaining their rights to express their views, their comprehension, as well as their perceptions, may have changed.

A feature common to all the case studies was the use of an 'action list' which was used by site managers to track any issues raised that required a response or action to close the issue out. This allowed the workers to see results rather than feel nothing was being done. Questions relating to "speed of response" and "satisfaction with response" did not change significantly. However, as already mentioned, this was because the questionnaires completed before the intervention showed a high level of positive perception to begin with: "very good" or "good" in relation to these issues. Therefore, it was difficult to see any change in perception after the intervention. It is reasonable to assume that seeing action subsequently to issues being discussed could be a factor helping to build trust.

This 'ceiling effect' when testing interventions in work environments where performance is already high raises a difficult issue for all action research aimed at performance improvement in health and safety. Organisations willing to engage in such research are almost invariably 'safety conscious' and, therefore, at the higher end of the performance range. This leaves little room to demonstrate significantly large improvements and also fails to expose the intervention methods to the obstacles that poorer performing organisations are likely to place in their way.

There were, however, two sites that returned poor numbers of questionnaires and little feedback from interviews. On one occasion the sub-contracted workers displayed a negative attitude to the intervention. On the other the site manager displayed a negative attitude. This indicates that if either management or workers see no benefit to worker engagement then it will probably fail.

When analysing the findings in relation to the DWP Jobcentre Plus (JCP) programme of works similarities and contrasts can be seen. Whilst the DWP JCP project sites used very structured approaches to worker engagement informal lines of communication still emerged. These proved to be very useful and could potentially be lost if not recorded. The resources in place at the DWP JCP project sites, as a result of the integrated project team approach, lend themselves very well to the development of a managed strategy for worker engagement. For example the provision of client appointed EHS co-ordinators to administer the auditing and benchmarking process allowed indicators of worker engagement to be measured impartially. If the approaches trialled on the case study sites were to be expanded then similar resources to these would need to be considered. Motivation to effectively implement the worker engagement initiatives could also be improved by implementing the DWP JCP approach of linking it to the Principal Contractors' incentive/bonus payments.

## 8.0 CONCLUSIONS AND RECOMMENDATIONS

### 8.1 Conclusions

#### 8.1.1 Introduction

The aim of this study was to investigate different approaches of worker engagement in the construction industry and establish which techniques can improve health and safety performance in a cost effective manner.

An extensive literature search coupled with further industry consultation was undertaken to inform the development of different approaches to worker engagement on construction sites. The main approaches were categorised under the following headings:

- Safety representatives
- H&S Committees
- Pre-task briefings
- Safety circles
- Surveys
- Elements of behavioural initiatives
- Informal communication

In order to test the impact of these various approaches in a practical manner four combinations were developed for application as interventions on various sites within the refurbishment of bank branch offices throughout the UK. These four interventions were:

1. Pre-task briefings with feedback cards
2. Suggestion schemes with safety circles
3. Informal approach using safety champions
4. Safety representative with H&S committee

#### 8.1.2 Lessons learned

There was an expectation that these four approaches could be analysed separately to determine whether one or some were more effective than the others. The actual findings have shown that certain elements from each were successful whilst other, similar, elements were not as successful. For example, workers were more inclined to participate in face to face or oral communication, often of an informal nature. By contrast, attempts to engage workers in formal written communication resulted in rather poor results. This was evidenced by the majority of feedback coming from pre-start meetings, safety circle meetings and informal conversations with site management. Conversely, techniques such as feedback cards, suggestion forms and worker diaries all experienced limited or no use. Informal communication also led to changes and improvements on other sites visited out with the case studies.

This raises questions about the propensity of construction workers to use written methods of communication. It would be reasonable to conclude that literacy levels within the sample population were low as this is often a problem levelled at workers in the construction industry. However, it may be both condescending and naïve to think this is the case for all the workers concerned. There may be other explanations such as a reluctance to commit opinions to paper which will form a permanent record. Individuals may often discuss issues 'off the record' but decline to put them in writing for fear of recrimination or victimisation. An

individual may actually have reasonably good literacy skills but lack the confidence to write fluently and therefore decline to do so, possibly because of the time and effort required. This issue also highlights another possible reason for not using written communication, that being, the time factor. In many cases oral communication is more practical and quicker. Current perceptions of ‘paperwork’ in relation to health and safety, especially, for example, the Construction Design and Management Regulations (CDM), may even foster a resentment for any further form of written documents. Therefore, these issues will need detailed consideration in relation to the workforce being engaged before deciding to implement any specific approach.

Those sites where more than 50% of the sampled workers had formal health and safety training recorded more discussion on topics beyond that of merely site issues. This re-emphasises the significance of training. Training also helps workers understand why certain safety controls are in place and raises awareness of hazards which should encourage hazard and near-miss reporting. Other sites of a similar nature, where extensive ‘Passport’ training was undertaken resulted in high levels of reporting to assist in improving performance. Therefore, leaving it to chance that workers have been fully trained in health and safety, to the standard required for meaningful worker engagement, may be a false economy. However, there was evidence to show that those workers who had undergone such training recently were frustrated at having to repeat the training again. It is therefore advisable to have a mechanism in place to ascertain workers training records before committing them to extensive courses.

Measures were taken before and after the interventions using questionnaires which showed some changes. However, the safety representative approach could not be fully analysed due to the difficulties in trying to establish a safety representative and further problems trying to obtain a suitable sample of questionnaires.

Case studies, where the analysis could be done, showed improvements in perceptions regarding management’s provision of information and workers opportunities to express views. In addition to this, all the approaches resulted in workers accepting that the approaches were a genuine attempt by management to engage workers.

**Workers perceptions of management’s provision of information improved** on sites where ‘suggestion schemes and safety circles’ and ‘informal with safety champion’ approaches were used. This indicates that workers are amenable to both formal and informal methods of communication when management wish to notify them of health and safety issues.

**Workers perceptions of opportunities to express views improved** on sites where ‘pre-task briefings with feedback cards’ and ‘suggestion schemes and safety circles’ approaches were used. This finding would seem to conflict with the lack of completed feedback cards and recommendation forms. However, the visual reminder provided by these tools may have influenced workers answers when completing questionnaires despite not actually taking advantage of the opportunity to use them, possibly for the reasons relating to written communication discussed above.

**Workers perceptions of how well worker engagement was managed on site improved** with all three interventions. This was shown by an increase in workers answering ‘no’ to the question “can worker engagement on this site be improved?” This finding indicates that workers may have increased their awareness of worker engagement purely as a result of being exposed to each intervention thereby attaining an understanding of what management were trying to achieve. Therefore they may have been more sympathetic to management’s efforts when answering the questionnaire after the intervention. This also shows that an active move by management to encourage worker engagement is recognised, and appreciated, by the

workforce. However, to sustain these positive outcomes leadership will be required if and when workers begin to respond to requests to be engaged.

This leadership, that is required to sustain worker engagement, involves demonstrating that workers views are being taken seriously and have influenced decisions made by management. This was measured by responses to questions about “speed of response” and “satisfaction with response”. It was anticipated that comparing these results with the actual number of actions closed out on the case study sites would show an improvement where more actions were dealt with. Unfortunately, no discernable change was observed. Therefore no definite conclusions could be made regarding this issue. It was also disappointing not to see any measurable change in perceptions of workers ability to influence decisions or improve safety.

This ‘ceiling effect’ when testing interventions in real life settings, where performance is already high, as demonstrated here, is a common problem for all action research studies. Therefore, above average measures of safety performance before the intervention leaves little room for improvement after the intervention (see Appendix IV).

Having said this, there were two specific sites within the case studies that showed a poor response to the interventions. On one occasion the workers, who were sub-contracted, displayed a negative attitude to the intervention. On the other site the manager displayed a negative attitude. This shows how delicate the balance is in relation to worker engagement and how easily it can fail if either party do not see the potential benefits.

Finally, there were extreme difficulties faced by the research team in trying to secure workers to become safety representatives. There were also further problems obtaining data for the case study eventually found. These problems may reflect the situation in the industry in relation to the low level of safety representatives especially within the sub-sector in which the case studies were based. It is therefore understandable that many within the construction industry choose to engage with workers directly as opposed to using safety representatives. Whilst there are, no doubt, benefits to be gained from this approach, the findings of this study cannot add much more to our understanding of these benefits.

### **8.1.3 Implications for industry**

This study has highlighted elements of worker engagement approaches that can be successful and the problems that can be faced when trying to implement such interventions. Whilst investigating the factors that constitute effective worker engagement it has been found that any approach should have three elements that can be measured to gauge success:

- Adequate and appropriate resource provision;
- Opportunities for two-way communication;
- Regular audit of the extent to which:
  - decisions have taken account of workers input;
  - issues raised by workers have been followed through.

The provision of resources includes the relevant training for both management and workers to ensure they can contribute to meaningful discussions, identify hazards and report unsafe conditions or near misses. With regard to managers, there is an added need to complement health and safety training with communication skills training, especially ‘soft skills’ required for informal communication.

Opportunities for two-way communication relates to the mechanisms required to impart information to workers as well as elicit their views in a structured manner. The ability of informal communications to develop a safe and healthy culture as well as gain workers views cannot be overstated. This is not to say that formal written methods of communication should be abandoned. Rather, the method of communication needs to be conducive to the needs of

the workers being engaged. Therefore, assessing specific workers abilities and attitudes regarding communication is crucial before implementing a potentially expensive, but superficial, initiative.

The type of issues discussed is another important factor which will be linked to levels of competence. Jensen (2002) discusses five dimensions to “workplace assessment” which can be used to gauge the level of meaningful discussion:

1. *The area of issues covered*; do they relate purely to physical hazards or do they extend to e.g. organisational management, safety culture etc?
2. *The objectives in developing the solutions*; where do they rank in the UK equivalent of the hierarchy of risk controls?
3. *The depth of understanding*; in relation to accident causation.
4. *The scope of solutions presented*; similar to 2 above but dealing with whether solutions are aimed at prevention, e.g. through design, or if they are reactive.
5. *The ability to transfer issues*; regarding sphere of influence to others when an issue needs action by those out-with the immediate line manager e.g. senior management, plant manager etc.

These five dimensions help determine the scope of issues discussed and, with further work, could inform the development of a maturity model in this respect.

The third element of providing proof of decisions made with input from workers and taking action, can be fulfilled with a simple ‘action list’. This can be used to track issues until they are closed out. This does not need to be a separate list but can be integrated with other management tools used for the same purpose. This final element is a demonstration by management that they are serious about workers views and will help build the trust required to sustain continued improvement in performance. Therefore this process needs to be transparent for all to see, workers and senior management alike. Giving such feedback to workers is a proven method of increasing motivation. Likewise, involving senior management encourages the crucial middle managers on site to sustain their efforts.

This study was concerned with the problem area of smaller, short duration, sites where opportunities to establish long-term relationships is difficult. When considering any approach to worker engagement on such sites the following checklist of actions should be borne in mind:

- Pre-site training
- Induction
- Daily briefing
- Site walk
- Leaving survey

Pre-site training, such as a passport scheme or similar course, is a very useful method of ensuring everyone who comes on the site understands the hazards on construction sites and why controls are in place. However, screening may be required to help decide if everyone needs to attend such a course e.g. previous similar training.

A site induction is expected on any site or place of work. This is an excellent opportunity to explain procedures for any worker engagement approach that is in place. It is also the first point at which feedback can be gained from workers on their initial impression of the site and/or procedures in place. Any feedback should be recorded and, if necessary, actioned.

Daily briefings should be undertaken by line managers to cover the work to be done that day (or shift) as a matter of course. Two way communication is crucial at this point. Ensuring

feedback is recorded and actioned can be done informally or formally, depending on the process adopted.

It is expected that site managers will, through the course of the day (or shift), 'walk the site' at least once. It is also customary for them to carry a notebook or site diary. This is an opportunity to discuss issues informally and record actions if necessary. Transferring any items that cannot be dealt with immediately to an 'action list' will serve as a visual reminder.

When a worker leaves the site for the last time it is advisable to gain an understanding of what they thought of the site and its management. This does not need to be a formal process but a pro-forma may help. Issues should include: how the worker rated the site for health and safety, a likewise rating of the site manager; reason for leaving; and any recommendations for improvement.

These methods should not be seen as separate from traditional approaches, such as safety committees or a safety representative, but should complement them if they are already in place.

#### **8.1.4 Limitations of this study**

The case studies chosen for this research were 'real life' sites, set in the sub-sector of office refurbishment. Quasi-experiments, such as these, in applied settings differ from true experiments in two ways. Firstly, the groups have not been randomly assigned, but already exist. Secondly, it is virtually impossible to control for other factors. If a series of like experiments are conducted and performance improves in time with the application of the treatment across all projects, then one could state with reasonable confidence that improvements were due to the experiment and not extraneous factors. Therefore, each intervention designed for the study was implemented on either two or three sites and compared with additional 'control' sites to improve internal validity (with the exception of approach 4). But it is acknowledged that this does not totally eradicate the problem. However, this was deemed an acceptable trade-off in favour of rich 'real-life' data obtained.

The duration of the case study sites was relatively short due to the time constraints and resources placed on the study. Therefore, the impact on performance was minimal. Of greater significance, however, was the findings in relation to the practical aspects of implementing the interventions. It would have been difficult to extend the findings of any performance related improvement to other sectors of the construction industry. However, these practical issues, such as methods of communication and influence of training, can be seen as universal issues and therefore relate to the wider construction industry. It is acknowledged that larger sites will have significantly different issues to deal with, therefore, further research would be needed to determine the extent of any similarities or differences that may exist. It is reasonable to assume, however, that smaller sites, in general, are where help and guidance is most needed. With such little research been done in this area of direct worker engagement on small construction sites the findings present a useful point of reference to develop further research.

## **8.2 Recommendations**

### **8.2.1 Industry practice**

The findings of the study have useful implications for industry as discussed above in 8.1.3. Therefore, there are a number of issues that should be addressed to inform current industry practice.

### **Publication of main findings**

The main findings should be publicised to the wider construction industry. Dissemination of the practical aspects of implementing worker engagement techniques along with those elements found to be most successful would help practitioners understand better how to implement their own processes for effective worker engagement.

### **A guide to worker engagement**

These findings, together with the good practice methods observed, should be brought together in a short guide for industry practitioners to use. This would especially benefit smaller contractors who work in the industry. Such a guide would also be helpful to HSE enforcement officers as a framework to assess project procedures for worker engagement against.

### **Proposed CDM Regulations 2007**

The requirement to provide information, ensure co-operation and co-ordination, as well as seek views of workers, are all features of worker engagement enshrined in the CDM Regulations. These requirements, in relation to worker engagement, are scheduled to be expanded upon as part of the new proposals made by HSC and HSE to combine CDM with the Construction Health Safety and Welfare Regulations (1996), to be implemented in 2007. It is recommended that the findings in relation to oral and informal communication be acted upon by including advice to reduce paperwork and keep the burden of compliance with regulations at a minimum.

The added responsibilities of clients to ensure H&S management arrangements are in place at the start of a project, regardless of notification, means the findings of this study will be extremely useful to guide clients with respect to ensuring worker engagement provisions have been made by contractors.

### **Traditional approaches to consultation**

The 'traditional' approaches to worker consultation have not been fully tested during this study. Therefore, the use of worker representation or traditional safety committees has not been found to be any better or worse than the direct approaches studied. It is therefore recommended that HSE still promote these approaches, which are seen as useful complementing strategies to direct worker engagement.

### **8.2.2 Further research**

The findings of this study have helped to understand an area of construction health and safety that has received little research, i.e. direct worker engagement. These findings have also helped to identify areas that would merit further study.

### **Measurement Tool for Worker Engagement**

To fully establish the effectiveness of worker engagement approaches within the wider construction industry it is recommended that a measurement tool be developed. Elements of the questionnaire for this study have already been incorporated into such a tool being developed at Glasgow Caledonian University. Further funding would allow this tool to be fully developed and tested on a wider scale. It is anticipated that such a tool could then inform the development of a 'Worker Engagement Maturity Index'. Therefore benchmarking and performance improvement could be achieved in the longer term.

### **Longitudinal study**

This study was conducted in twelve months which was a relatively short space of time. Such studies invariably have to compromise as a result of this finite resource. Therefore, to fully develop the findings and relate them to the wider construction industry, it is recommended that a longitudinal study be undertaken. This would allow statistical analysis of performance

to be measured over a longer period of time and predict with confidence the effect of implementing the interventions studied.

### **Communication with non-English speaking workers**

The issue of language used on site was not addressed by this study. There were a number of case study sites in the London area. However, all workers on these sites could speak English. However, it is acknowledged that the problem of non-English speaking workers in the industry is a growing one with obvious implications for, amongst other things, worker engagement and the management of health and safety. Therefore, it is recommended that a further study, incorporating methods of communicating with non-English speaking workers be conducted to ascertain how such barriers can be overcome in the future.

These recommendations are made with the premise that worker engagement is a developing strategy within the industry. Therefore, more work is required before it can be refined and fully incorporated into current procedures for the management of health and safety on construction sites. However, this should not deter the industry from continuing to align worker and management interests to reduce conflict, develop trust and ultimately improve performance. “Worker engagement should be the cornerstone of every civilised society” (HSC 2004).

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## APPENDIX II CASE STUDY ALLOCATIONS

<b>Approach</b>	<b>Site</b>
Informal & 'champion'	Site 1 Site 2 Site 3
Pre-task briefing & cards	Site 4 Site 5 Site 6
Suggestion box & Safety Circles	Site 7 Site 8
<b><i>Separately</i></b>	
T.U. Safety Rep	Site 9

## APPENDIX III QUESTIONNAIRE

### Personal details

### Project Ref. No.

- 1) Are you Male  Female
- 2) Date of Birth DD / MM / YYYY
- 3) Are you Part Time  Full Time  **AND** are you Temporary  Permanent
- 4) Type of employer Main Cont.  Sub-C  Agency   Other \_\_\_\_\_
- 5) Job title (trade/description) \_\_\_\_\_
- 6) Length of time: (6.1) with employer YY  MM  (6.2) on site WW  DD
- 7) Training in the last 5 years (list type and duration):  
\_\_\_\_\_  
\_\_\_\_\_

All questions relate to **THIS PROJECT ONLY** and **MANAGEMENT ON THIS PROJECT**. Tick one box only for each question unless told otherwise.

- 8) How good are management at **informing** you about H&S risks you face on this job? (e.g. clear & consistent)

Very good  Good  Neither good nor bad  Bad  Very bad

**8.1.** Does management **inform** you about:

- |  |                              |                             |                                     |
|--|------------------------------|-----------------------------|-------------------------------------|
| • H&S Policy (what senior management say about H&S)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't Know <input type="checkbox"/> |
| • Risk Assessment (via Method Statement etc.)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't Know <input type="checkbox"/> |
| • Procedures for reporting accidents / ill health (e.g. accident book, who to inform etc.) | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't Know <input type="checkbox"/> |
| • Changes to work that affect H&S  | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't Know <input type="checkbox"/> |
| • H&S Performance (e.g. lowest accident rates)   | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't Know <input type="checkbox"/> |
| • What to do in an emergency   | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't Know <input type="checkbox"/> |

- 9) How good are management at providing ways of getting **feedback** from workers about H&S?

Very good  Good  Neither good nor bad  Bad  Very bad

**9.1.** Does management give you the opportunity to **give your views** on:

- |  |                              |                             |                                     |
|--|------------------------------|-----------------------------|-------------------------------------|
| • H&S Policy (input to its development or changes)   | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't Know <input type="checkbox"/> |
| • Risk Assessment (help in doing it/make comments)   | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't Know <input type="checkbox"/> |
| • Procedures for reporting accidents / ill health    | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't Know <input type="checkbox"/> |
| • Changes to work/equipment affecting H&S            | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't Know <input type="checkbox"/> |
| • H&S problems that exist on the site or near misses | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't Know <input type="checkbox"/> |
| • Site rules   | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't Know <input type="checkbox"/> |
| • The way your work gets done                        | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't Know <input type="checkbox"/> |

10) If either you or someone else wishes to give a view on H&S (ask questions; make comments or recommendations; express concerns/report a near miss) do management **take any notice**?

- **If you ask questions** Yes  No
  - **If you make recommendations** Yes  No
  - **If you raise concerns/report near miss** Yes  No
- (If **any** one is Yes go to Q11) (If **all** are No go to Q14)

11) If you or someone else raises issues about H&S, in general, **how quickly** does management deal with it (tick one box for ‘acknowledge’ i.e. confirmed receiving your view , ‘propose action’ & ‘take action’).

Try to give your answer in relation to the urgency i.e. you would expect missing edge protection to be dealt with more quickly than rubbish in a corner).

**11.1. If you ask questions**

- Mgt. Acknowledgement Very quick  Quick  Slow  Very slow  Not done
- Mgt. Give answer/action Very quick  Quick  Slow  Very slow  Not done
- Mgt. Take action Very quick  Quick  Slow  Very slow  Not done

**11.2. If you make recommendations**

- Mgt. Acknowledgement Very quick  Quick  Slow  Very slow  Not done
- Mgt. Give answer/action Very quick  Quick  Slow  Very slow  Not done
- Mgt. Take action Very quick  Quick  Slow  Very slow  Not done

**11.3. If you raise concerns/report near miss**

- Mgt. Acknowledgement Very quick  Quick  Slow  Very slow  Not done
- Mgt. Give answer/action Very quick  Quick  Slow  Very slow  Not done
- Mgt. Take action Very quick  Quick  Slow  Very slow  Not done

12) If you or someone else has raised any issues about H&S, in general, **how satisfied** have you been with the action taken by management?

**12.1. If you ask questions**

- Very satisfied  Satisfied  Neither way  Dissatisfied  Very dissatisfied

**12.2. If you make recommendations**

- Very satisfied  Satisfied  Neither way  Dissatisfied  Very dissatisfied

**12.3. If you raise concerns/report near miss**

- Very satisfied  Satisfied  Neither way  Dissatisfied  Very dissatisfied

13) What influence do you think you have over **management’s decisions** regarding H&S?

- |  |  |  |  |  |
|--|--|--|--|--|
| Power to<br>change a<br>decision<br><input type="checkbox"/> | Opinion<br>taken into<br>account<br><input type="checkbox"/> | Opinion<br>considered<br>sometimes<br><input type="checkbox"/> | Opinion rarely<br>considered<br><input type="checkbox"/> | No influence<br><input type="checkbox"/> |
|--|--|--|--|--|

14) Do you think that the way management **“engage you”** (i.e. inform you about H&S, get your views and take action regarding H&S) on this project could be **improved**?

- Yes  (go to Q15)      No  (go to Q16)      Don’t know  (go to Q17)

15) Please write below some notes on **problems** you have seen (regarding “engagement”).

---

---

16) Please note anything that has **impressed** you regarding arrangements for H&S “engagement”.

---

---

17) How **safe** do you feel on this site?

Very safe       Safe       Neither way       Unsafe       Very unsafe

18) In general, do **others** on this site work safely when:

- **Management are watching**      Yes       No       Don't know
- **Working unsupervised**      Yes       No       Don't know

19) Overall, how good would you say **site management** are at managing H&S?

Very good       Good       Neither good nor bad       Bad       Very bad

20) In general, how would you describe the **relationship** between site management and workers?

Very good       Good       Neither good nor bad       Bad       Very bad

21) Do you think the **main contractor's senior management** support good H&S on this site?

Yes       No       Don't know

22) Do you think **senior project management** (working for the client) support good H&S on this site?

Yes       No       Don't know

23) Are you aware of anyone who has **quit work** on this site because they were **unhappy** with something/someone?

Yes  (Reason \_\_\_\_\_) No       Don't know

24) Are you aware of any **recommendations** made by workers that have **improved** more than just H&S? (e.g. speeded up work; made things easier; helped improve morale; reduced costs)

Yes  (Examples \_\_\_\_\_) No       Don't know

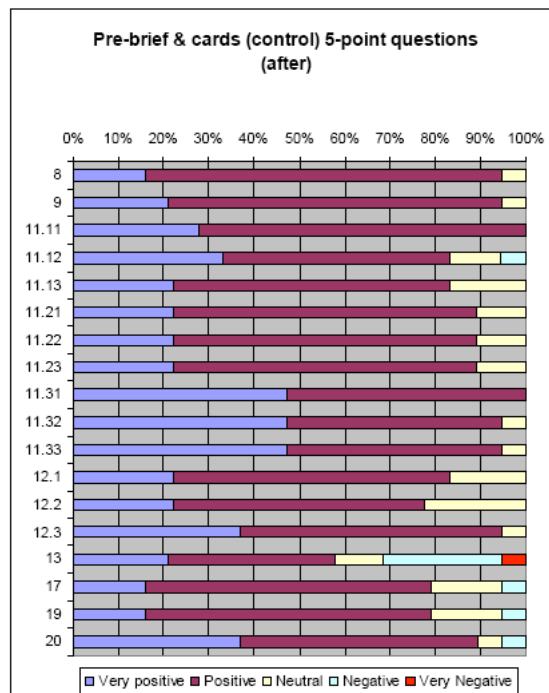
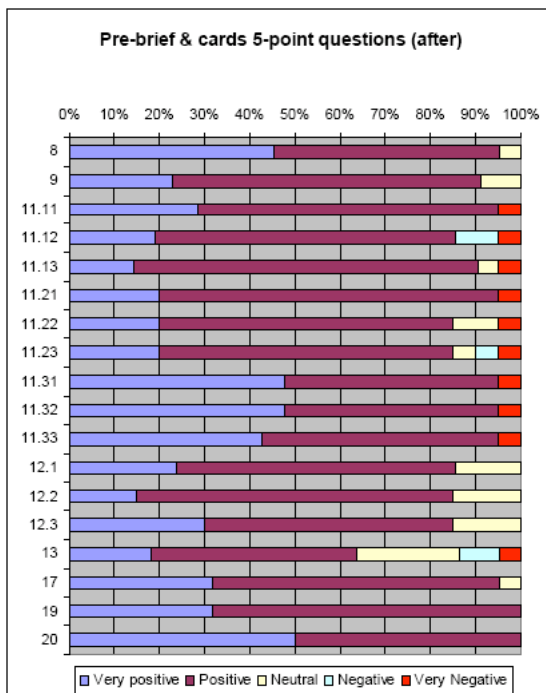
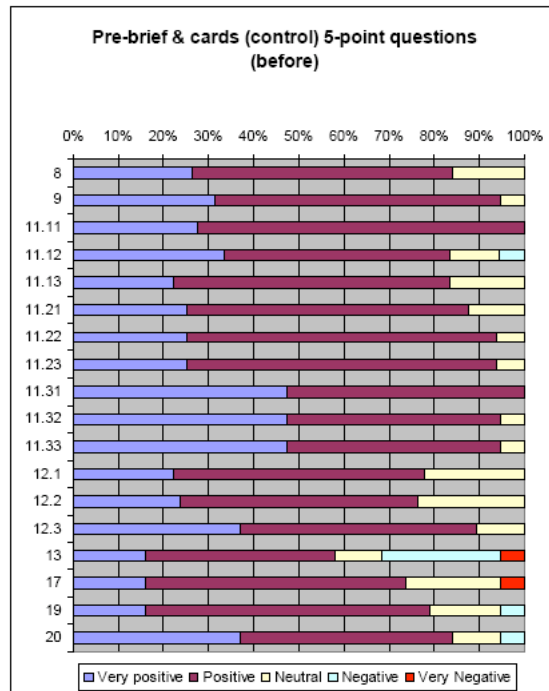
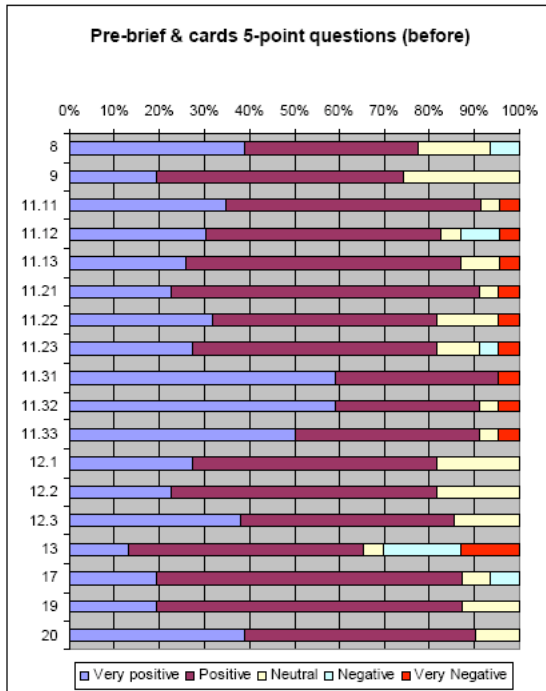
25) If you wish to say more about this subject please give some contact details below.

Name \_\_\_\_\_ Phone No. \_\_\_\_\_

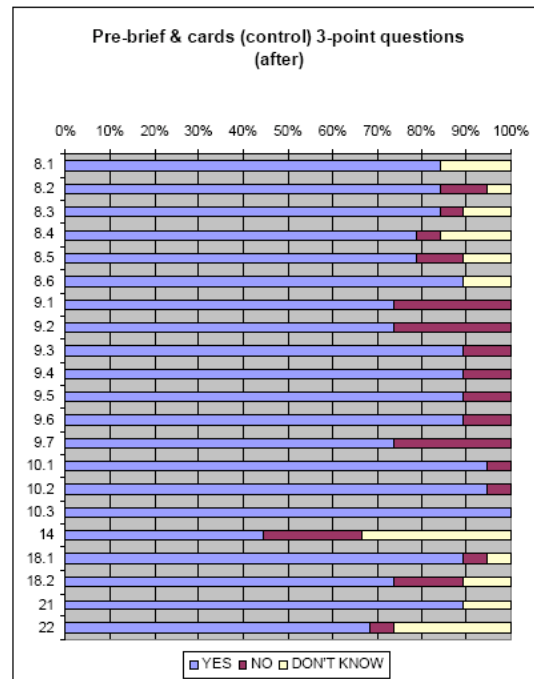
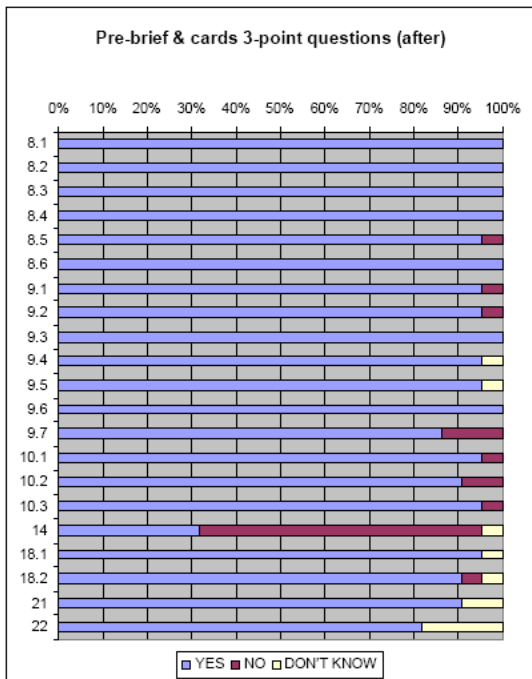
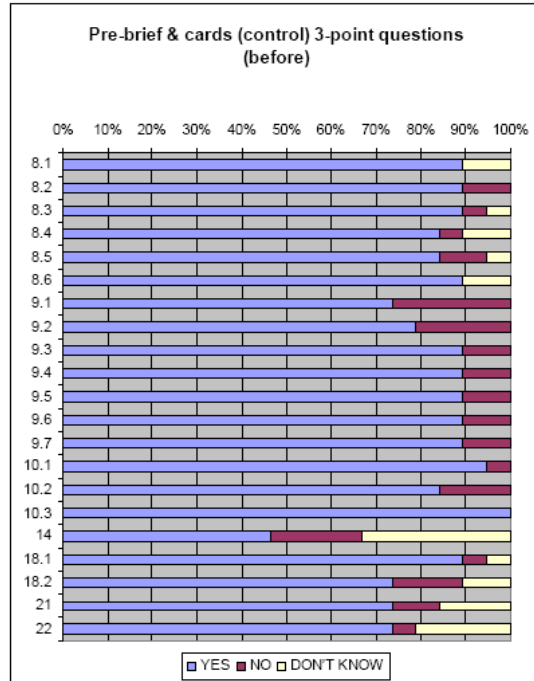
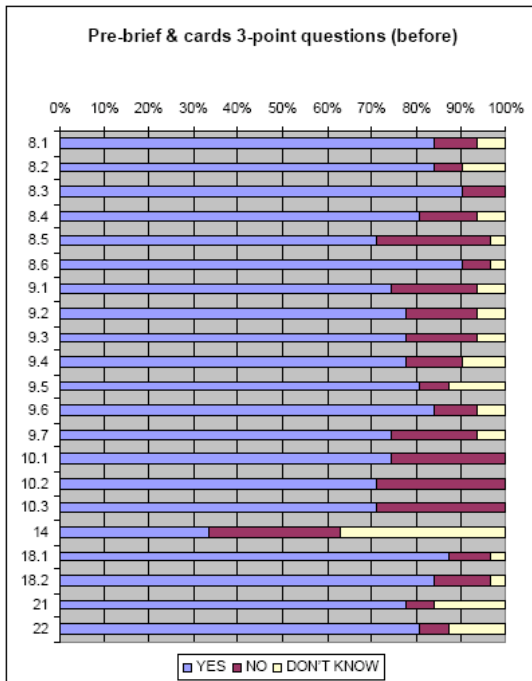
Email \_\_\_\_\_

# APPENDIX IV SUMMARY OF QUESTIONNAIRE ANSWERS

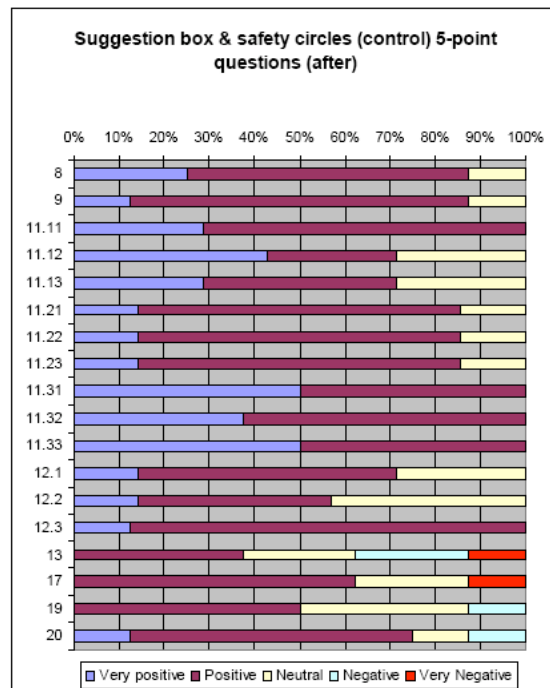
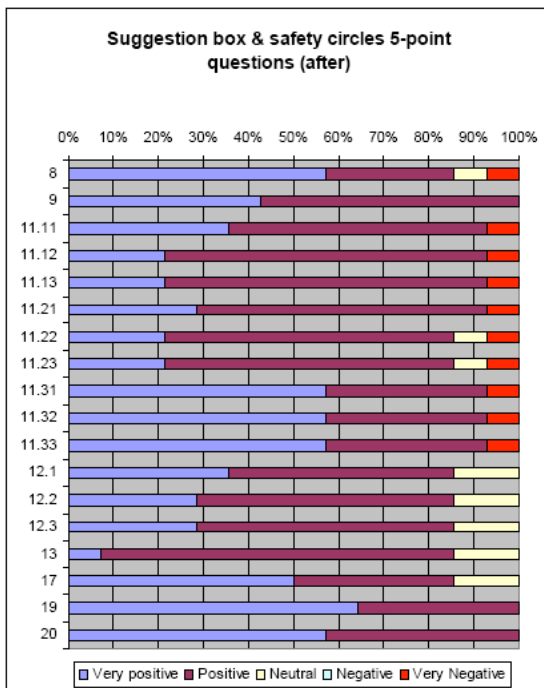
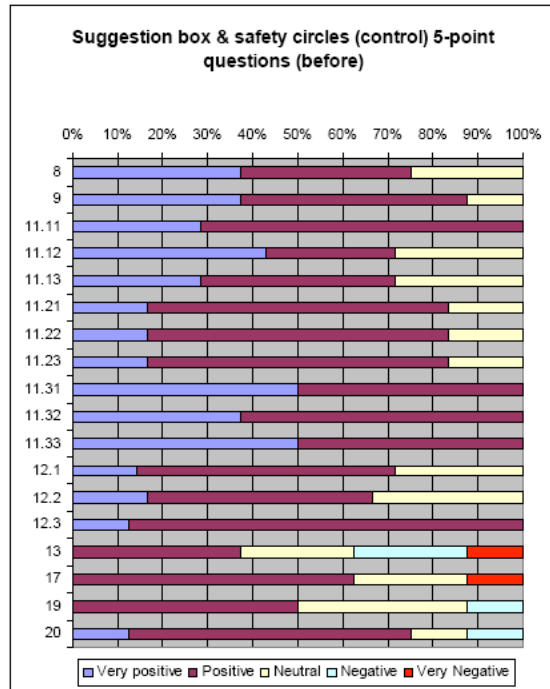
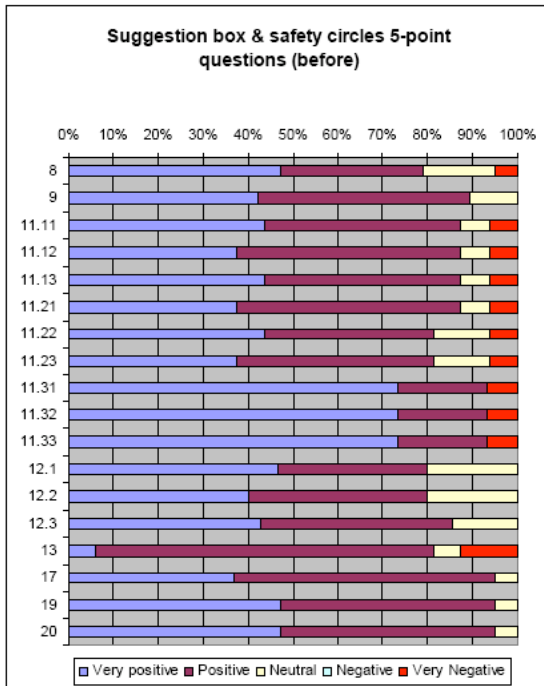
## Pre-task briefings with feedback cards – 5 Likert-point questions



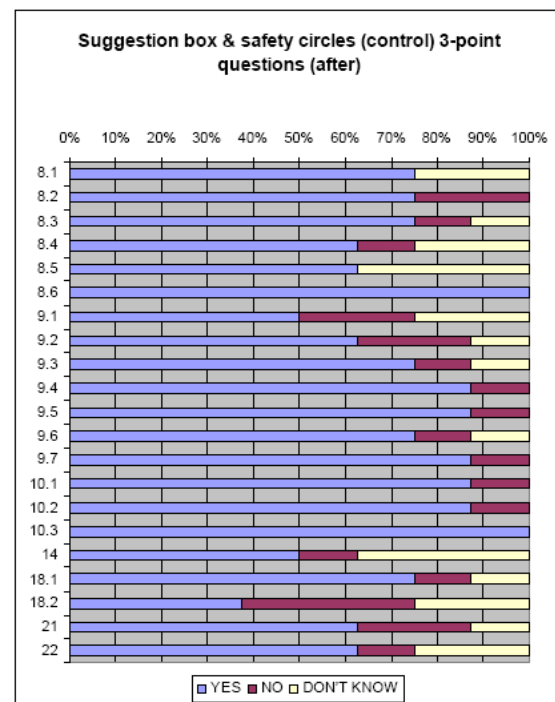
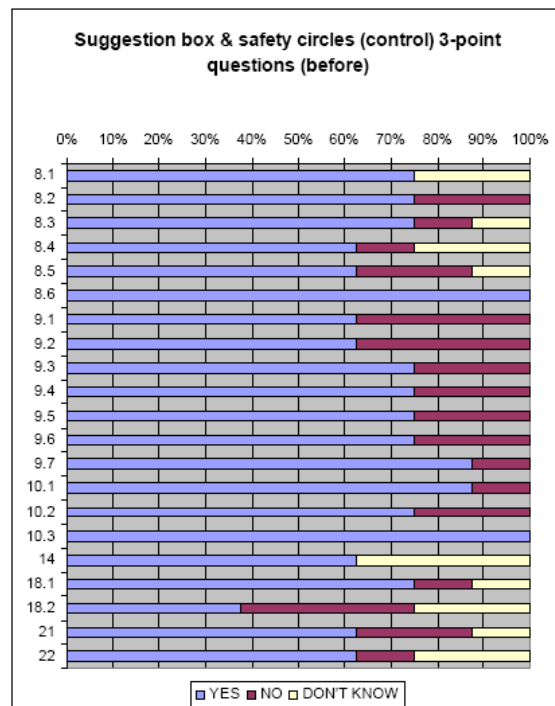
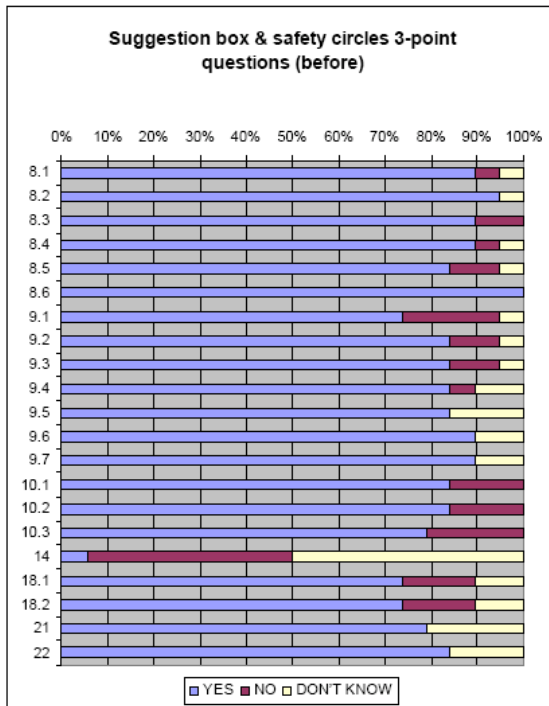
### Pre-task briefings with feedback cards – 3 Likert-point questions



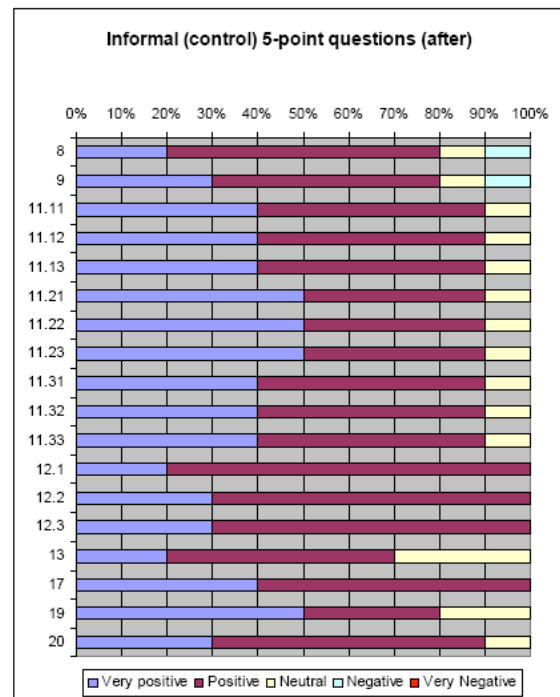
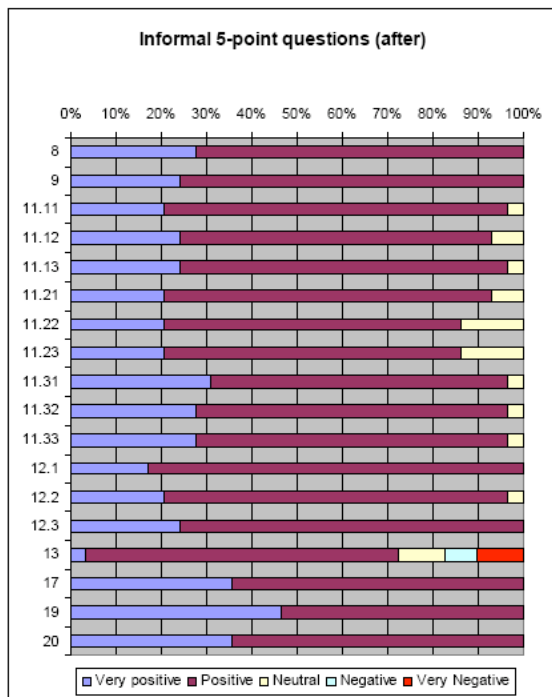
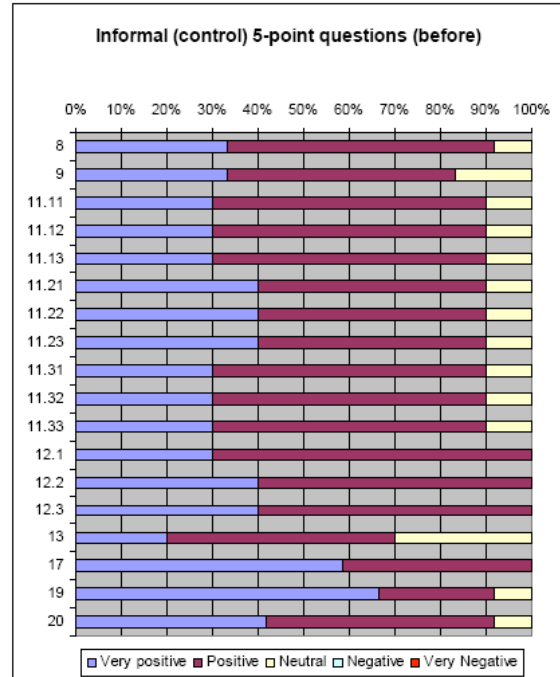
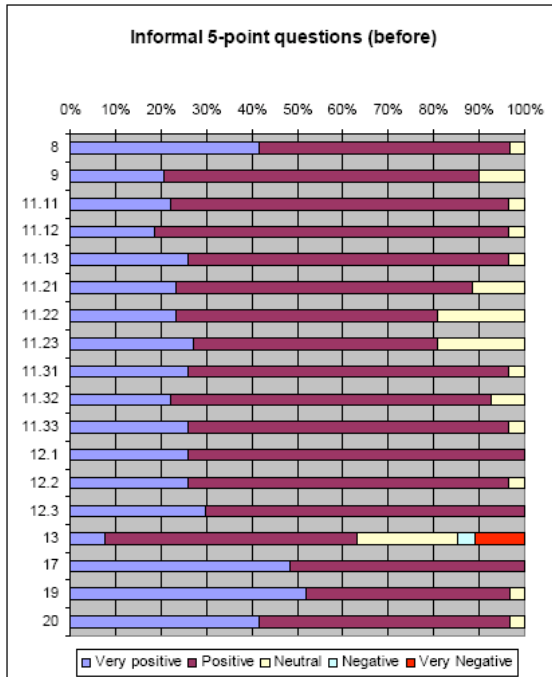
## Suggestion schemes with safety circles – 5 Likert-point questions



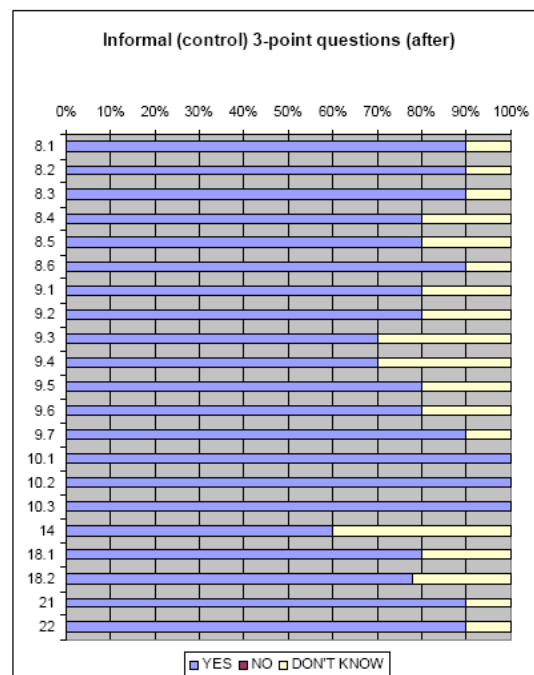
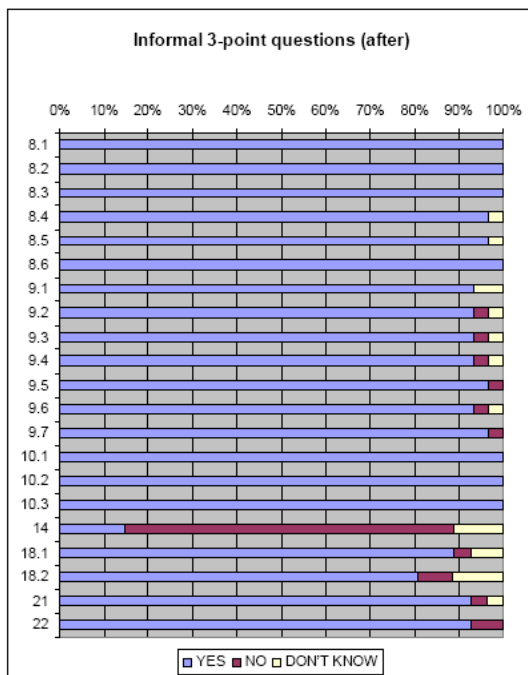
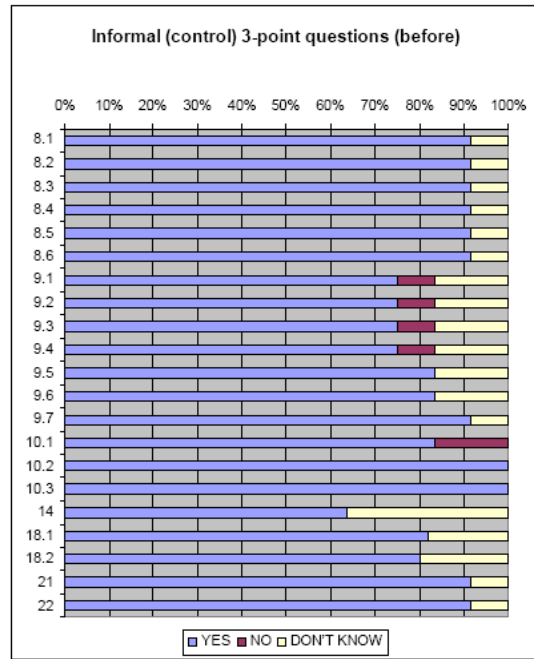
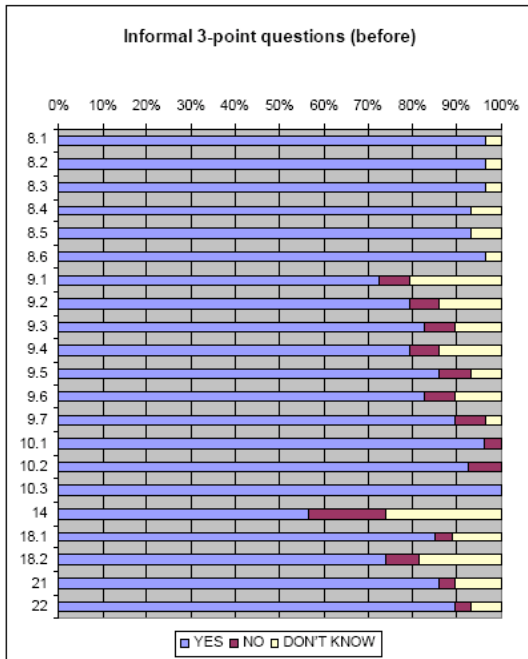
## Suggestion schemes with safety circles – 3 Likert-point questions



## Informal approach using 'safety champions' – 5 Likert-point questions



### Informal approach using 'safety champions' – 3 Likert-point questions



## APPENDIX V INTERVENTION STRATEGIES

### Intervention 1 Pre-task Participation & elements from Behavioural Initiatives

#### Pre-task Participation

##### Pre-task/shift briefing and feedback (feedback card)

A pre-task card is issued by site management/foremen to every work gang for completion, alternatively he/she can act as a scribe for the workers.

This is done at the start of every shift.

If totally different work begins during a shift a new card is issued. As a guide, if the different work is covered by a separate risk assessment then a separate card is required.

Discusses the work, including R. A. / Method Statement – compare planned with actual

- The card is issued during a briefing on what work is to be done during the shift. This may include a briefing from the risk assessment prepared for the work or the contents of any method statement or a verbal reminder of this for continuing work.
- Feedback on the briefing is sought. Opinions from workers may include problems or errors in the RA/MS e.g. changes or omissions; out of date methods; or wrong information, which the worker can identify.

Report near misses / unsafe conditions from previous day

- Workers are encouraged to report near misses from the previous shift on the card
- Workers are encouraged to report any problems e.g. plant and machinery, other workers behaving unsafe etc.

Any other issues can be raised

- Any other issues which relate to health, safety or welfare can also be raised.
- Even other general issues, including recommendations, can be raised. The worker should be encouraged to mention anything, including issues relating to productivity, cost savings, good ideas etc. and let the manager/foreman decide which aspect of the work it is relevant to.

Record: No. of issues closed-out/remaining

- Cards are collected and processed daily.
- This involves the site manager scanning each card. Those with any information are dealt with as follows:
  - Determine urgency (manager's decision – although card will have URGENT check box for worker to complete if he/she thinks it's urgent)
    - If immediate action required – action that day, inform originator and mark card CLOSED OUT and date. File in a folder/box marked CLOSED OUT. Issue safety alert to site (and other sites if this is company practice).
    - Issues that can be dealt with in the briefing are dealt with.
    - If not urgent advise originator of date/time for answer/action. Mark this date/time on card and place in file/box marked LIVE CARDS.
    - Near miss or unsafe condition reports are usually recorded separately for internal records. Safety alert may also be issued.
  - Daily and weekly routine
    - Follow up actions using existing method of planning e.g. diary, log, to-do list etc. Refer decisions that can't be dealt with to appropriate line manager/department.

- Weekly check of cards in LIVE CARDS file, action/chase up any over one week old (this should only happen if site manager has had to refer issue to a superior/other department).
- Advise originators of progress/status (verbally if still on site or via company internal system if off site).
- Mark date on cards as they are closed out and move to CLOSED OUT file.
- Advise originator of result/action (verbally if still on site or via company internal system if off site). Include result in following day's briefing.
- Monitoring
  - If cards in LIVE FILE exceed 10 a summary form may be required at the front of the file to monitor progress.
  - Weekly report of number of cards processed (received that week) running total of cards received, number LIVE and number CLOSED OUT. Send report to line manager, safety manager, research team and include in following day's brief to workers.
  - Record any administration problems with the system and report to research team e.g. confusion over what to do.
  - Record any particularly good aspects of the system including improvements made (H&S performance, productivity, cost etc). Keep separately in file for reference during debrief interview with researcher.

### **Elements of behavioural initiatives**

Any existing safety initiatives should, if appropriate, be tied into this intervention as long as they are explained to the research team. These may include:

- Incentive schemes
- Tool-box-talks
- News letters
- Good neighbour sub-contractor schemes

This means other forms of communication and training can be used to enhance the impact of the intervention.

## **PRE-START CARD**

Project:

Task:

Step 1

General communications from management:

(any general H&S information required to give to workers)

Step 2

Review of previous day's task/shift:

(includes HS&W issues & near miss reporting)

Step 3

The task

Date:

Task description & location:

Step 4

Review hazards, risks, safe systems of work:

(includes review of any Risk Assessment/Method Statement)

Step 5

Workers comments:

(HS&W – any matters relating to this task or in general)

## Intervention 2 Safety Circles & Suggestion Schemes

### Suggestion Schemes

#### Suggestion schemes on regular basis

- Suggestion box placed somewhere workers can access it easily, e.g. site hut/canteen.
- Suggestions are anonymous.
- Suggestions can be proactive (looking and planning ahead) or reactive (as the result of something that has happened).
- Suggestions can relate to:
  - *Opinions from workers regarding the tasks they will/have do/done, may include problems or errors in the RA/MS e.g. changes or omissions; out of date methods; or wrong information, which the worker can identify.*
  - Workers encouraged to report near misses from the previous shift.
  - Workers encouraged to report any problems e.g. plant and machinery, other workers behaving unsafe etc.
  - Any other issues which relate to health, safety or welfare can also be raised, e.g. improvements.
  - Even other issues, indirectly affecting H&S, can be raised. The worker should be encouraged to mention anything and let the manager/foreman decide if it is relevant.

#### Results feed into safety circle group

- Recommendations, suggestions, problems reported etc. are given to the 'safety circle' to deal with.
- Members of the safety circle are also encouraged to submit suggestions.
- Members of the safety circle can submit a written suggestion based on a verbal communication from any other worker.
- Management have a legal duty to communicate information down to workers also. Therefore, managers can support this legal duty through the safety circle. The 'task' for the safety circle will be
  - Dissemination of H&S information; and
  - Peer review of co-workers' safe behaviour.

### Safety Circles

#### Safety circle made up of volunteers: management & workers

- For small sites (under 15 workers) it may be possible to include ALL workers (with their consent).
- If possible, an experienced 'worker' will chair the meetings
- As a rough guide, workers should outnumber managers at least 4:1 (unless the total number in the group is below 5)

#### Safety circle charged with responding to specific H&S problems (not a general committee)

- Purpose of the meeting is to deal with H&S related issues/problems
- There is no meeting 'for the sake of having a meeting'. There needs to be at least one 'significant' issue from either workers or management for a meeting to run.
- Issues can be proactive or reactive as mentioned above.
- Meeting begins with list of items to address and ends with list of action points, who should action, and when it is to be done.

#### Record: minutes, No. of issues closed-out/remaining

- Minutes are to be short and concise. The main required information is:
  - Item
  - Action
  - Who
  - When

- In addition to this, an ongoing record of actions and subsequent activities is required for tracking i.e. LIVE actions (still to be dealt with), note of progress, and date CLOSED OUT.
- At meeting the process is as follows:
  - Determine urgency.
    - If immediate action required – action that day and mark minute sheet CLOSED OUT and date. Issue safety alert to site (and other sites if this is company practice).
    - If not urgent note date/time for answer/action, who is to action and when.
    - Near miss or unsafe condition reports are usually recorded separately for internal records. Safety alert may also be issued.
- Weekly routine
  - Follow up actions using existing method of planning e.g. diary, log, to-do list etc. Refer decisions that can't be dealt with to appropriate line manager/department.
  - Weekly check of summary sheet, action/chase up any over one week old (this should only happen if site manager has had to refer issue to a superior/other department).
  - Advise safety circle members of progress/status (verbally or forward copy of summary form).
  - Mark date on summary form as actions are closed out.
  - Advise safety circle of result/action at next meeting or weekly, whichever comes first.
  - Inform rest of site (if there are any workers out with the Safety Circle on site) once a week of progress and results.
- Monitoring
  - Weekly report of number of items processed (received that week), running total of issues, number LIVE and number CLOSED OUT. Send report to line manager, safety manager, research team.
  - Record any administration problems with the system and report to research team e.g. confusion over what to do.
  - Record any particularly good aspects of the system including improvements made (H&S performance, productivity, cost etc). Keep separately in file for reference during debrief interview with researcher.

## **SUGGESTION SHEET**

As part of an HSE funded research project, we are asking workers to give views that you think could improve Health, safety or Welfare on this project. As a guide, your views could cover:

- QUESTIONS about HS&W provisions
- CONCERNS about particular problems in relation to HS&W
- COMMENTS about HS&W provisions
- RECOMMENDATIONS that could improve HS&W
- ASK for some resource e.g. TRAINING, TOOLS, WELFARE PROVISIONS

Every sensible comment or suggestion will be looked at positively.

## Intervention 2 Safety Circles & Suggestion Schemes

### Suggestion Schemes

#### Suggestion schemes on regular basis

- Suggestion box placed somewhere workers can access it easily, e.g. site hut/canteen.
- Suggestions are anonymous.
- Suggestions can be proactive (looking and planning ahead) or reactive (as the result of something that has happened).
- Suggestions can relate to:
  - *Opinions from workers regarding the tasks they will/have do/done, may include problems or errors in the RA/MS e.g. changes or omissions; out of date methods; or wrong information, which the worker can identify.*
  - Workers encouraged to report near misses from the previous shift.
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#### Record: minutes, No. of issues closed-out/remaining

- Minutes are to be short and concise. The main required information is:
  - Item
  - Action
  - Who
  - When

- Site manager/safety champion record any administration problems with the system and report to research team e.g. confusion over what to do.
- Site manager/safety champion record any particularly good aspects of the system including improvements made (H&S performance, productivity, cost etc). Keep separately in file for reference during debrief interview with researcher.

**SAMPLE DIARY**

Date	Summary	Any Actions
XX/XX	TITLE Text.....	Tick

## APPENDIX VI LIST OF ACTIONS

SITE (%*)	Item No.	Action Required	CLOSED	Comments
1(20)	1	Investigate suspicious wires found in wall	YES	Tested – wires dead (removed)
	2	Podium tower won't fit in small room	YES	Short-term, use stepladder (RA)
	3	Plumber not using hot-work-permit	YES	Explained to plumber, thanked vigilant worker
	4	Bad housekeeping complaints	YES	Informed sub-c to tidy mess
2(30)	1	System required for sub-c to monitor exposure times using pneumatic chisel	YES	Report start-finish times to site foreman
	2	Requested plastic sheets to protect counters	YES	Ordered for next day
3(50)	1	Clean welfare area	YES	Done
	2	Rodents found at bins	YES	Pest control contractor
	3	Low step trip hazard suggested slight ramp	YES	Agreed with designer
4(20)	-	None		
5(45)	1	Clean toilet	YES	Done by labourer
	2	New paper towels required	YES	Ordered
6(70)	1	Suspected asbestos under carpet tiles	YES	Sample tested - OK
	2	Problem with site manager	NO	Clash of personalities
	3	Materials stored in fire escape area	YES	Moved
	4	Toilet out of paper	YES	New rolls
	5	Requested temporary branch closure – reduce risk to client's staff	NO	Client requirement – contractor to manage risk
7(45)	1	Toilets need toilet rolls	YES	Bought from shop
8(55)	1	Nowhere to store materials on site	NO	Logistics, off-site storage, just in time delivery considered
	2	Electrician complained other trades in same work area (dust being created)	YES	Moved to different areas, work re-scheduled
	3	No running water	YES	Temporary shut off (plumber)
9(15)	1	Requested gloves	YES	Ordered
	2	Requested boots	YES	Ordered

\*% = Percentage of returned questionnaires where workers received formal H&S training



# An investigation of approaches to worker engagement

The following report was prepared by Glasgow Caledonian University, School of the Built and Natural Environment for the Health and Safety Executive (HSE) and describes a study of approaches to worker engagement in the construction industry. The study involved an extensive literature review of methods used to engage construction workers in relation to the management of health and safety on site, followed by industry consultation via workshops before developing four packages of intervention strategies to test on several sites. Before and after measures of worker perceptions combined with qualitative interviews found that three approaches successfully improve workers perceptions of worker engagement and the health and safety performance of management. Informal methods of engagement were more successful than written approaches and investment in formal health and safety training resulted in more meaningful discussions. Further research is required in relation to developing tools to measure worker engagement and the impact of foreign language speaking workers.

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