HSE

Health and Safety Executive

Improving the effectiveness of the Construction (Design and Management) Regulations 1994

Establishing views from construction stakeholders on the current effectiveness of CDM

Prepared by **BOMEL Limited**
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Research Report

HSE

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Establishing views from construction stakeholders on the current effectiveness of CDM

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This report provides the basis for a future evaluation of the effectiveness of the proposed revisions to the Construction (Design and Management) Regulations 1994 (CDM) that are planned to take effect in April 2007. It describes a study to obtain the views of construction stakeholders on the effectiveness of CDM 1994, and to prepare a series of key indicators of improvement in areas that affect health and safety in construction. Data were gathered from three sources: a review of recent trade literature and industry and government initiatives to gain an insight into the current concerns of the construction industry regarding the CDM Regulations; 25 structured interviews to provide in-depth views based on single duty holders; and three workshops using the Influence Network technique to discuss the factors that influence health and safety in construction, and provide a wider context for the way that CDM 1994 is perceived in the construction industry. Data from these activities were triangulated and analysed against HSC's five high-level objectives to produce a series of direct and indirect indicators of change that can be used to guide the future evaluation of CDM 2007.

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HSE Books

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EXECUTIVE SUMMARY

INTRODUCTION AND OBJECTIVES

This report has been prepared by BOMEL Limited for the Health and Safety Executive under a research contract (RPU reference 6023/R33.125). It describes a study to establish the views of construction stakeholders on the effectiveness of the Construction (Design and Management) (CDM) Regulations 1994. This report provides a baseline for future evaluation of the effectiveness of the proposed revisions to CDM that are planned to take effect in April 2007.

In September 2003, the Health and Safety Commission took the decision to revise CDM with the objectives of improving the management of risk by:

- Simplifying the regulations to improve their clarity so duty holders can easily identify their responsibilities.
- Maximising the flexibility of the regulations to fit with the vast range of contractual arrangements.
- Ensuring a focus on planning and management rather than 'the plan' or other paperwork in order to emphasise active management and minimise bureaucracy.
- Strengthening requirements regarding co-ordination and co-operation, particularly between designers and contractors.
- Simplifying the process for assessing competence.

In 2006, BOMEL conducted a large-scale survey of stakeholders to establish the costs incurred, and attitudes held, by duty holders in complying with CDM 1994[(1)]. The results of this study confirmed the relevance of HSC's objectives.

HSE's aims for this study were to:

1. Obtain the views of a comprehensive range of stakeholders in the construction industry on the effectiveness of the CDM Regulations 1994 in relation to health and safety in construction – i.e. to establish the "current state of play".
2. Obtain views from stakeholders on perceived successes and problems with CDM.
3. Present such views clearly in a manner that will facilitate HSE's ongoing evaluation of the effectiveness of the planned revision of CDM.

In order to achieve these aims, the following objectives were set and define the scope of work:

1. Review recent trade literature and initiatives to identify stakeholders' views on CDM.

2. Undertake 25 structured face-to-face interviews with a range of duty holders to obtain their views on the effectiveness of CDM.

3. Undertake three Influence Network workshops with a range of duty holders to obtain their views on the effectiveness of CDM.

4. Collate and triangulate the three sources of evidence.

5. Present the information in such a way that it can be used as a baseline for the current effectiveness of CDM.

REVIEW OF TRADE JOURNALS AND RECENT INITIATIVES

Trade and professional journals were reviewed in order to gain an insight into the current concerns of the construction industry regarding the CDM Regulations. The review also included recent initiatives that have contributed to the discussion.

The main themes that appeared regularly in the trade publications reviewed were:

1. **Clarity** – roles and responsibilities should be clarified.

2. **Competence** – Designers in particular need the technical knowledge to achieve the desired levels of competence.

3. **Cost effectiveness** – CDM is currently not perceived to be demonstrating its potential cost effectiveness due to excessive bureaucracy.

There are a number of common threads that run through the industry-led initiatives at the EU and national level, and in the analysis of responses to the HSE's 2002 Discussion Document. These include:

- The importance of the client role
- The opportunities that designers have to eliminate or reduce risk
- The advantages of working together
- Training and competence
- Worker consultation
- Occupational health
- Guidance
- Enforcement

STRUCTURED INTERVIEWS

Structured interviews were carried out with 25 organisations (five each of clients, contractors, designers, planning supervisors and principal contractors) to provide in-depth views based on single duty holders. Questions included semi-quantitative measures of the current state of play using Likert scales and opportunities for discussion of the underlying issues.

The duty holders interviewed considered that the following issues would need to be addressed in order to improve the effectiveness of CDM:

- Lack of awareness of responsibilities.
- Ineffectiveness of the planning supervisor role.
- The system encourages risk transfer and self protection.
- Implementations of CDM lead to excessive paperwork and bureaucracy.
- Lack of clarity, leading to fear, uncertainty and over cautiousness.
- CDM does not cover every project situation, or player.
- Improvements in managing risks through design.
- Duty holders not using documents created under CDM.

INFLUENCE NETWORK WORKSHOPS

Three Influence Network workshops were held to discuss the factors that influence health and safety in construction, and provide a wider context for the way that CDM 94 is perceived in the construction industry. Each workshop group had a broadly similar profile, with attendees chosen to represent each of the stakeholders that would be involved in a typical CDM project; this enabled the group to consider the interaction between duty holders in a project team and to try to reach moderated views on the relative importance of each factor. The Influence Network process was tailored to address issues relating to HSC's five high-level objectives. The Influence Network used is shown in Figure 1.

- **Supervision** appears to be the most significant *Organisational* level influence on the *Direct* level factors. The average rating given for supervision was between 4 and 6 (ranging from 2 to 9). Attendees could not identify a single differentiating factor to explain the range of quality of supervision indicated by these ratings. It was agreed that good supervisors were very important for the successful communication and implementation of rules and procedures because they are respected by the workers. It was noted that the supervisor role is being eroded, to some extent due to changes in company structures and contractual arrangements.

- **Health and safety management** appears to be the most significant *Strategy* level influence on the *Organisational* level factors. The average rating given for health and safety management was 6/7 (ratings ranged from 3 to 10). The varying standard of this factor across the industry was thought to be due to the extent to which health and safety management systems are kept updated, specific, and relevant. A responsive health and safety management system seems to be a pre-condition for *Organisational* level change to occur.

- **Regulatory influence** appears to be the most significant *Environmental* level influence on the *Strategy* level factors. The average rating given for the regulatory influence in the construction industry was 4/5 (ratings ranged from 2 to 9). Attendees acknowledged HSE's lack of resources and commented on the difficulty of trying to be both advisor and enforcer. Responsiveness and consistency were considered to be important areas for improvement. The regulator was seen by attendees as an important influence on the *Strategy* level factors due to the legality of its requirements.

OVERALL FINDINGS

The views expressed by duty holders in this study have been analysed and reviewed alongside HSC's five objectives for the revised CDM regulations. These are summarised in the following text and provide indications of the perceptions relating to construction health and safety in general, and CDM in particular.

HSC objective 1: Simplifying the regulations to improve their clarity so duty holders can easily identify their responsibilities.

- Few comments were made about the clarity of the regulations themselves.

- Most feel that the ACoP is good, but that the industry could benefit from more case studies.

- There is thought to be sufficient guidance for SMEs and occasional clients, but there are issues surrounding access to that information.

- There are suggestions of problems with awareness and acceptance of responsibility.

- There is also some confusion about when CDM starts to apply, whether it applies to some projects, and identifying those who occupy the main duty holder roles.

HSC objective 2: Maximising the flexibility of the regulations to fit with the vast range of contractual arrangements.

- CDM is judged to sit well with the more traditional contractual arrangements; however, there can be difficulties with design and build, PPP, and PFI projects.

- Difficulties include identifying those who should be fulfilling the duty holder roles.

- There is also a possibility that clients in these projects may be unaware of or unwilling to carry out their obligations.

- The accountability of duty holders is considered important and it is felt that risk should not be transferred.

- There is a widespread belief that the project team does not come together early enough in many types of projects and that the schedule for appointing the planning supervisor, contractor procurement, and the communication of information, requires clarification and review.

- It appears that organisations in the construction industry use a variety of different systems and approaches to implementing CDM. Subcontracting organisations have to learn to be increasingly adaptive to fulfil the contractual requirements imposed upon them. This inconsistency has resulted in inefficiencies, confusion, and cynicism towards CDM.

- There are concerns over the lack of direct employment in the construction industry, and the increasing use of agency staff and migrant workers. This may have an impact on training, as the workforce becomes increasingly transient, and contracts may be a potential way of addressing this issue.

HSC objective 3: Ensuring a focus on planning and management rather than 'the plan' or other paperwork in order to emphasise active management and minimise bureaucracy.

- Health and safety management systems have developed and become more widespread; it is thought by some that many of the improvements in health and safety that have occurred in the industry are as a result of this, more so than CDM.

- There is a view that documents are produced to fulfil regulatory requirements, but are not then used or read. This is felt to be particularly the case with pre-qualification or competence assessment questionnaires, and the health and safety or construction phase plan.

- Bureaucracy is felt to be a result of inconsistent implementations and interpretations of CDM by duty holders with varying levels of competence and ideas about the purpose of their duties and the scope of their obligations. Fear and confusion about the requirements of CDM also encourages an overly cautious and bureaucratic approach.

- The need for standardisation and consistency runs parallel with a need to move away from generic documentation. Duty holders are calling for prescriptive guidance regarding the content and format of the CDM documents; education about the need to consider only significant risks; and case studies to illustrate possible ways of doing this.

HSC objective 4: Strengthening requirements regarding co-ordination and co-operation, particularly between designers and contractors.

- Co-operation appears to be a function of the acceptance of CDM obligations by the duty holders on a project.

- It is felt that an understanding of the business benefits that can result from fully embracing the regulations would improve the level of cooperation on most projects.

- Clients are considered to be a driving force that "sets the tone" of projects; their successful integration into the project team is considered an important issue.

- There is also an issue of knowledge, as cooperation becomes more likely if the requirements and restrictions affecting other trades and duty holder roles become known. This is particularly possible between designers and contractors.

- Those who work on site during the construction phase view coordination as vital; it is felt that arrangements should be considered during planning. Many issues appear to arise from the physical location and proximity of trades, the sequencing of work, and the provision of adequate access to the working areas.

HSC objective 5: Simplifying the process for assessing competence.

- The lack of a clear, prescriptive definition of competence has led to widespread confusion and inconsistency in the way in which assessment is carried out.

- The use of questionnaires to assess competence is thought to be unreliable; site visits and face-to-face interviews were considered preferable.

- The development of working relationships through repeat business is felt to be an important and valuable practice that is being ignored in favour of an overly bureaucratic interpretation of the regulations driven by fear of non-compliance.

Table 2 Summary of the themes emerging from articles published between 2000 and 2004

Themes	*Construction News*	*New Civil Engineer*
Designers can do more	4	4
Contractors can do more		3
Clients can do more	1	2
Planning supervisors can do more		2
Designers are doing better	2	1
CDM regulations are being generally successful		2
Planning supervisors need replacing	2	
All duty holders should communicate more		3
Current regulations lack clarity		1
Education is key to successful implementation of CDM		1
Current regulations are a bureaucratic burden		3

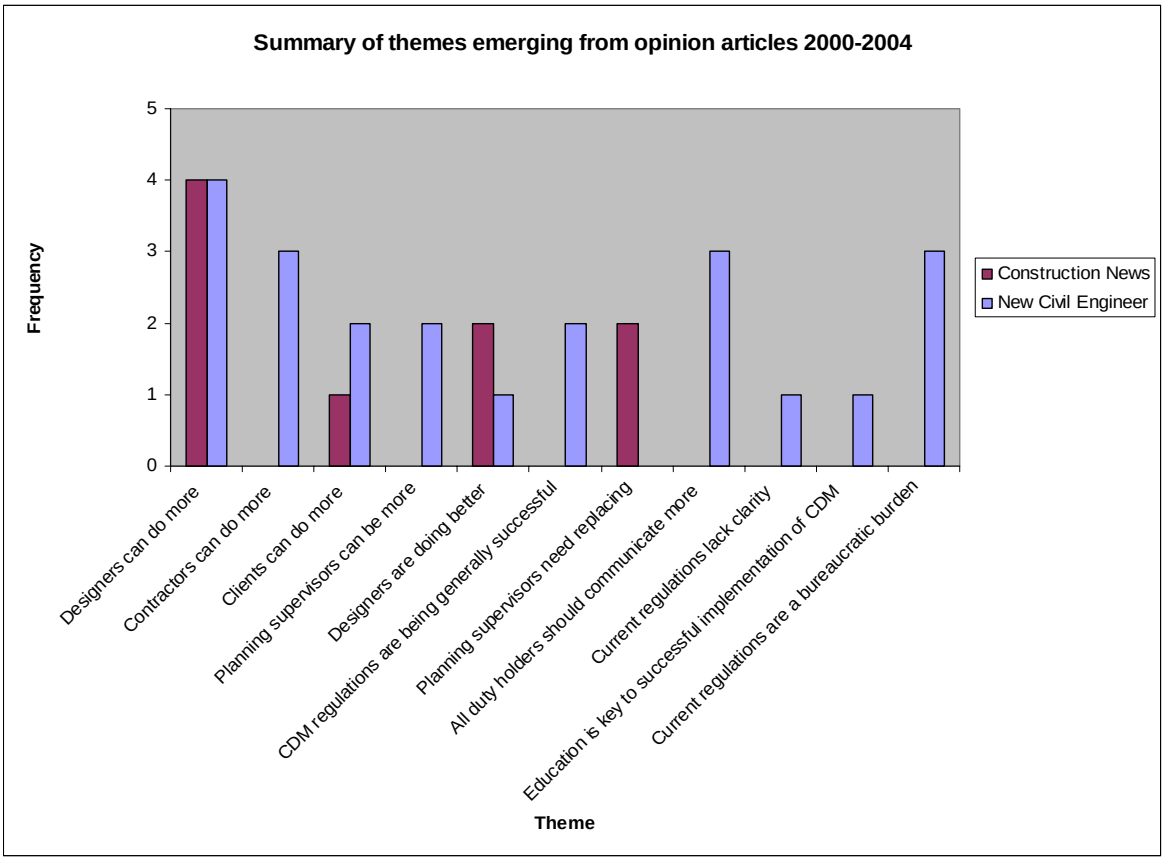


Figure 2 Summary of the themes emerging from articles published between 2000 and 2004

Table 9 Views held by each duty holder regarding their peers and other duty holders

	Duty holder under discussion				
	Client	***Designer***	***Planning supervisor***	***Principle contractor***	***Subcontractor***
Interviewee					
Client	Limited by their personnel's lack of knowledge, clients need support.	Designers must show more commitment to health and safety in design and improve their knowledge and skills.	The planning supervisor role should be extended but they need to become more competent.	Principle contractors are competent but could improve their approach to their workers.	Subcontractors need to invest more in training and improve their coordination with the principal contractor.
Designer	Clients do not have the necessary knowledge and so must seek sufficient advice.	Designers must develop systems and be more aware of buildability, embedding health and safety in their designs.	Planning supervisors need more experience, and the minimum skills required for the role need to be defined.	There is a variety of levels of competence, and a need to improve planning.	There are training issues, with principal contractors driving standards and controlling behaviour on site.
Planning supervisor	While acknowledging the range of competence, the responsibilities of the client role should be extended.	They need to improve their understanding and raise their standards of practice with regard to health and safety and CDM.	Planning supervisors should have more responsibility but need to improve their knowledge and experience of construction issues.	Principle contractors need to manage and use information better and improve coordination and communication with planning supervisors and subcontractors.	Subcontractors need to improve their communication of information
Principle contractor	Clients need to provide better information at an earlier stage and improve their knowledge of construction issues.	Designers need to improve their communication with other duty holders to develop their knowledge of construction issues.	This should be only a limited role, for facilitating and coordinating.	In general, principal contractors have improved but they need to work on coordination and the quality of their information.	Subcontractors have to take more responsibility and have more involvement with on-site health and safety.
Subcontractor	Clients are not considered to be competent and do not understand construction; they need to be more actively involved.	Designers need to accept their responsibilities and have more communication with those on site to learn about the implications of their designs.	Planning supervisors need to have better training and more experience; there are mixed views as to whether the planning supervisor role should be extended or restricted.	Competence has grown but principal contractors need to improve their communication with clients and subcontractors.	Subcontractors need to accept their responsibilities and improve their understanding of others' roles on site.

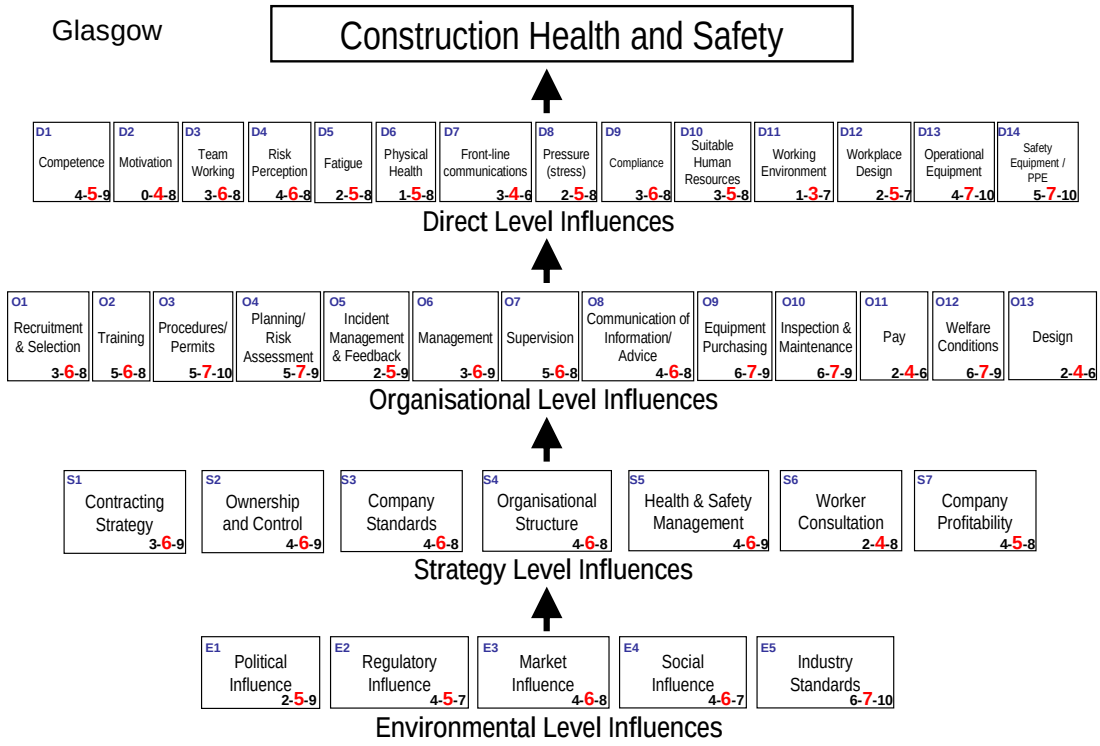


Figure 6 Overall average ratings obtained from the Glasgow workshop

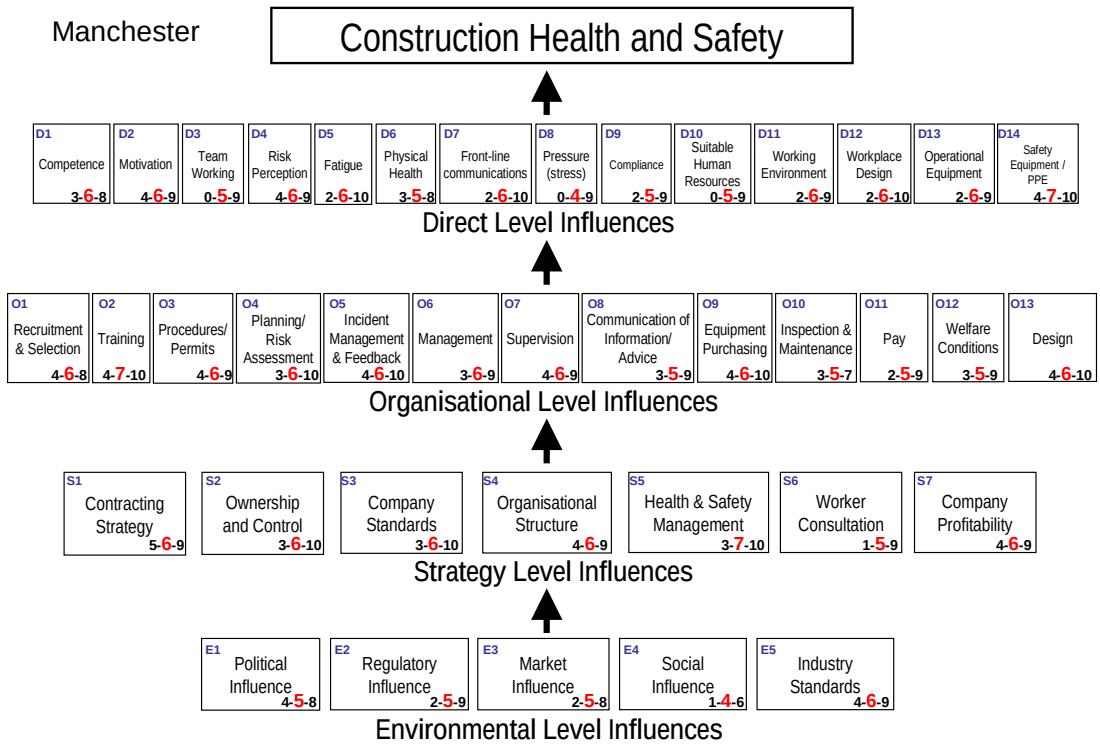


Figure 7 Overall average ratings obtained from the Manchester workshop

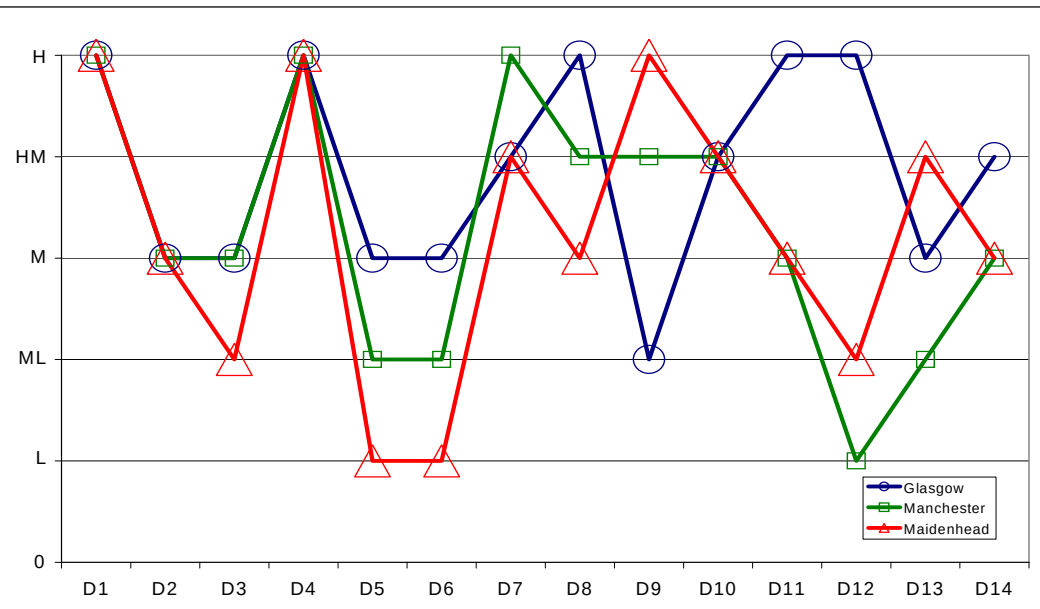
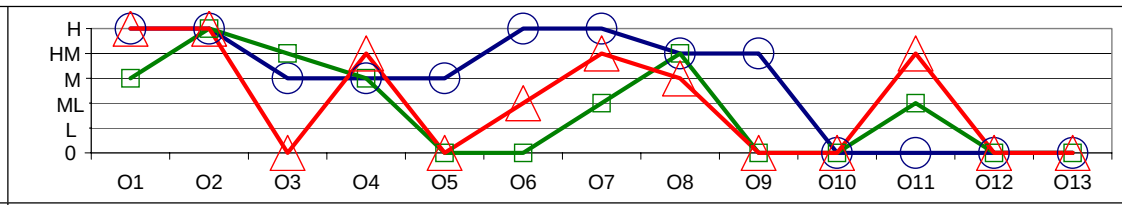
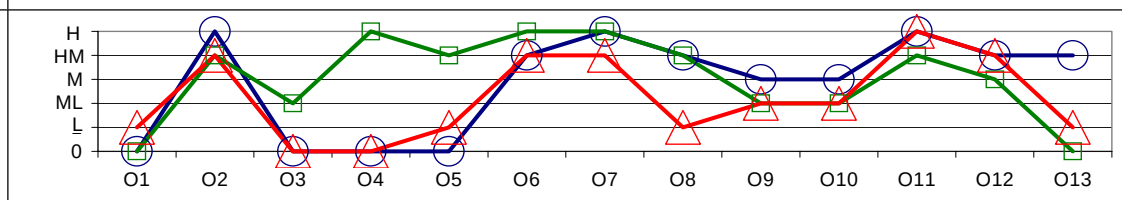
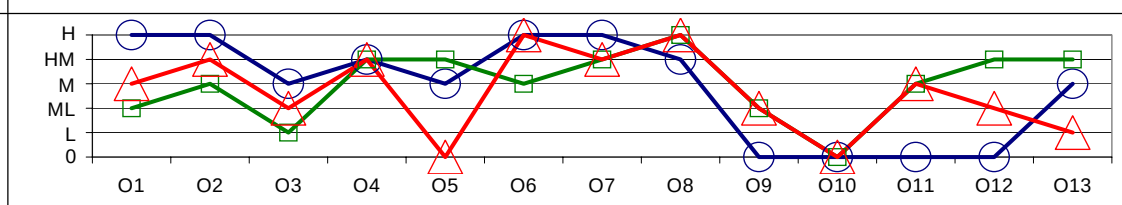
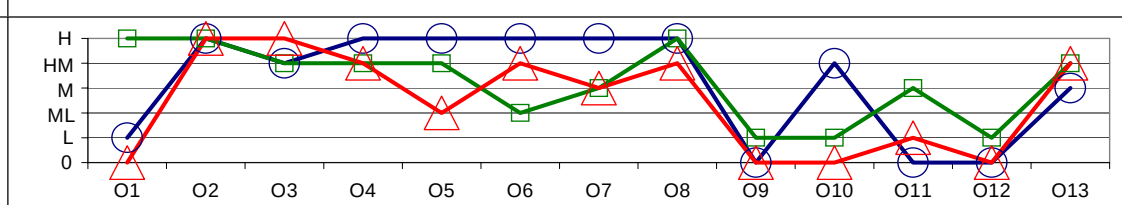
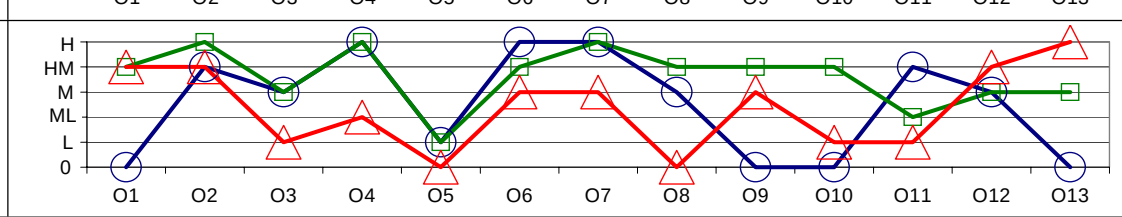
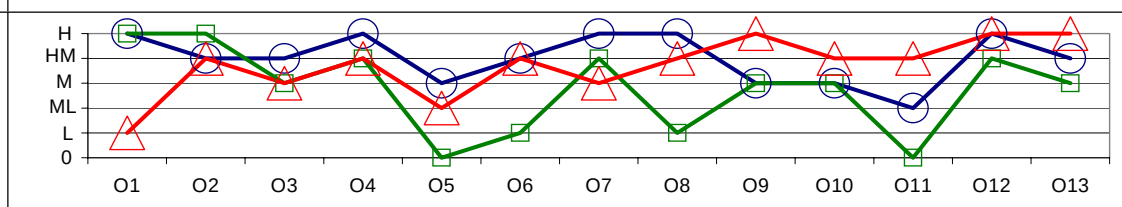
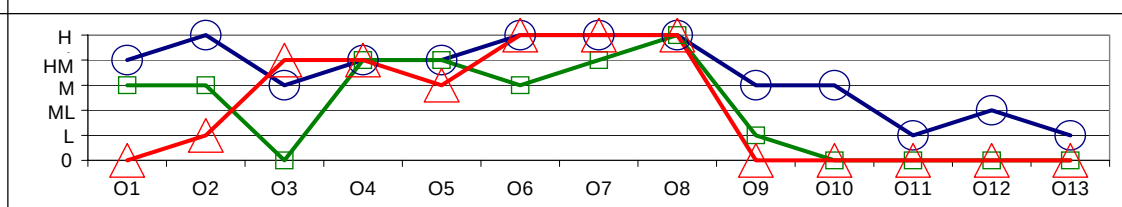
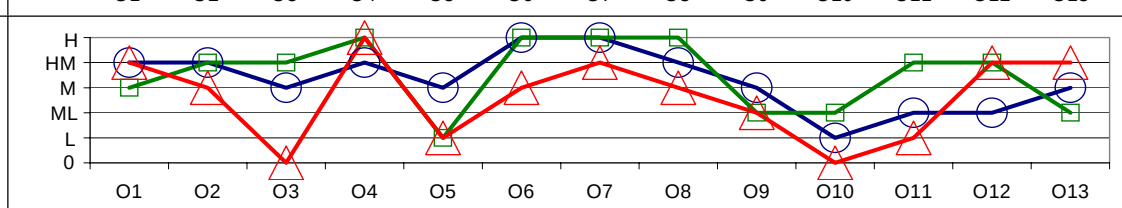
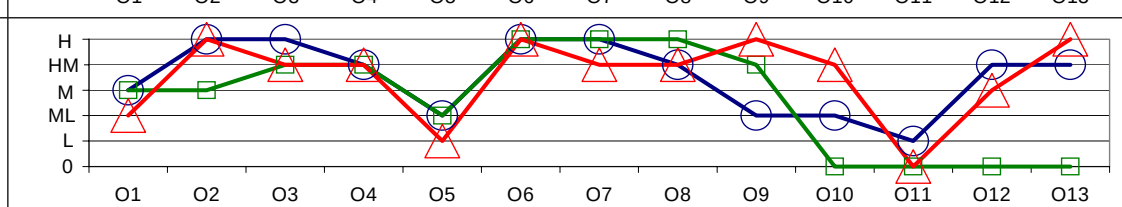
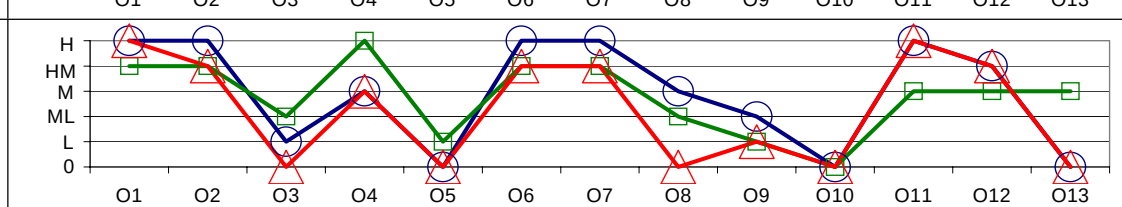
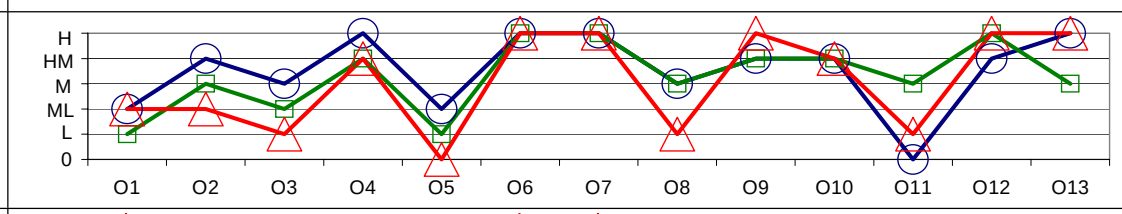
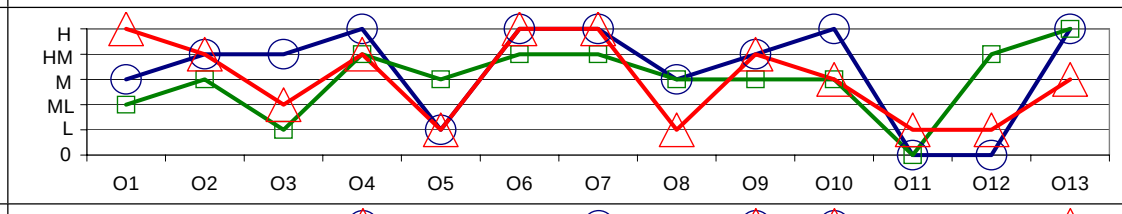
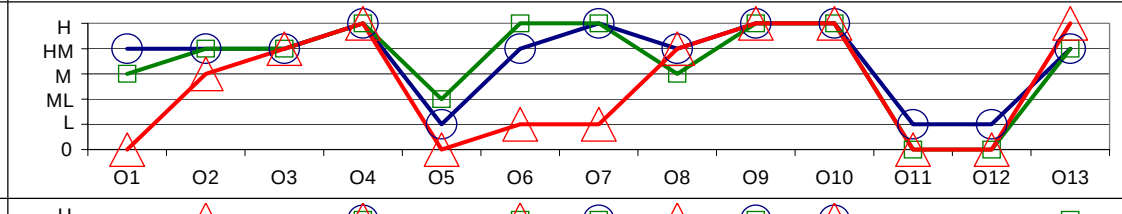
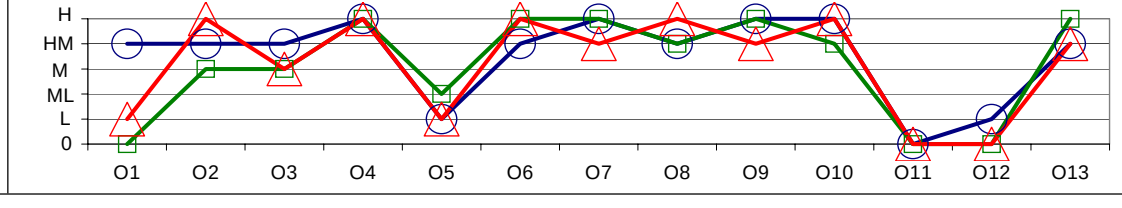
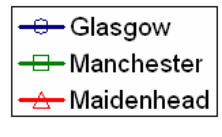
Direct Influences on health and safety in construction		D1 Competence D2 Motivation D3 Team Working D4 Risk Perception D5 Fatigue D6 Physical Health D7 Front-line Communications D8 Pressure (stress) D9 Compliance D10 Availability of suitable human resources D11 Working Environment D12 Workplace Design D13 – Operational Equipment D14 Safety Equipment / PPE

Figure 15 Influence of the Direct level factors on health and safety in construction

Organisational Influence on D1 (*Competence*)		
Organisational Influence on D2 (*Motivation*)		
Organisational Influence on D3 *(Team Working)*		
Organisational Influence on D4 *(Risk Perception)*		
Organisational Influence on D5 *(Fatigue)*		
Organisational Influence on D6 *(Physical Health)*		
Organisational Influence on D7 *(Front-line Communications)*		
Organisational Influence on D8 *(Pressure (stress))*		
Organisational Influence on D9 *(Compliance)*		
Organisational Influence on D10 *(Suitable Human Resources)*		
Organisational Influence on D11 *(Working Environment)*		
Organisational Influence on D12 *(Workplace Design)*		
Organisational Influence on D13 *(Operational Equipment)*		
Organisational Influence on D14 (*Safety Equipment / PPE*)		

O1 – Recruitment & Selection, O2 – Training, O3 – Procedures/Permits, O4 – Planning/Risk Assessment, O5 – Incident Management & Feedback, O6 – Management, O7 – Supervision, O8 – Communication of Information/advice, O9 – Equipment Purchasing, O10 – Inspection & Maintenance, O11 – Pay, O12 – Welfare Conditions, O13 – Design

Figure 16 Influence of the Organisational level factors on the Direct level.

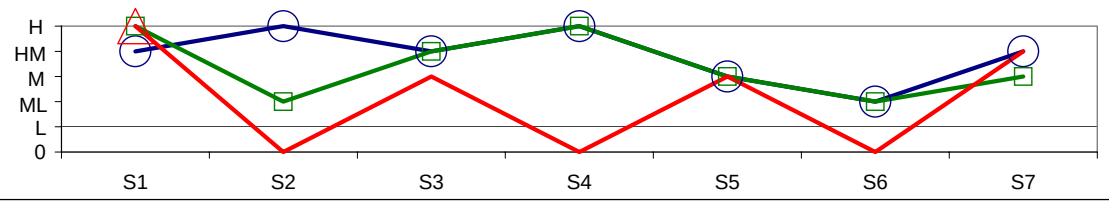
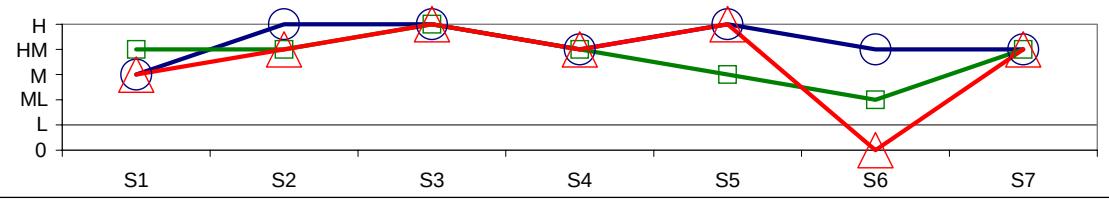
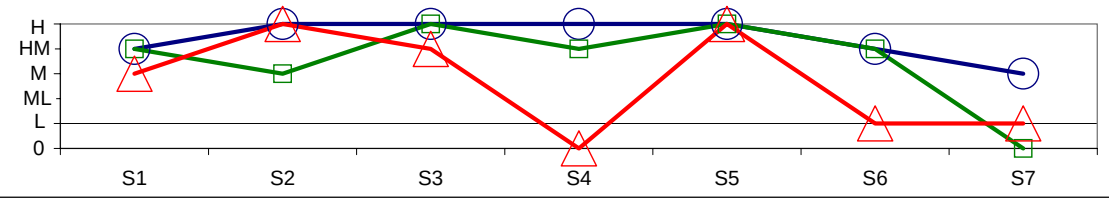
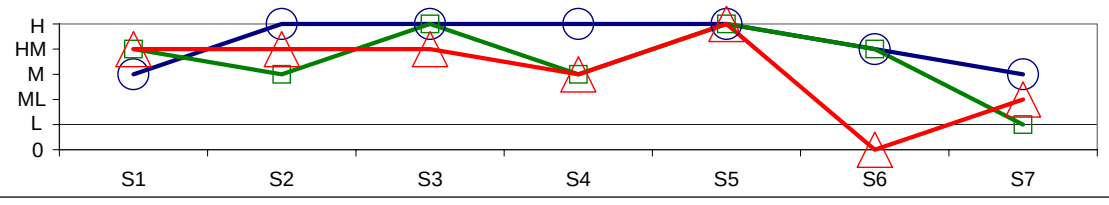
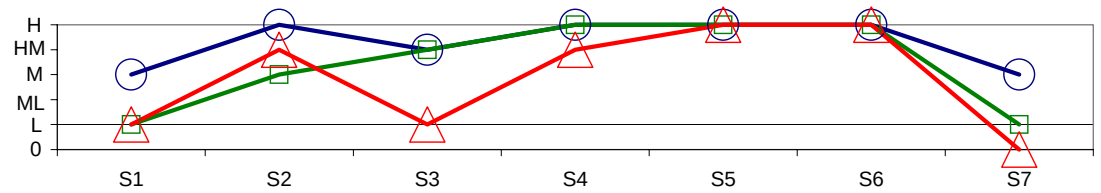
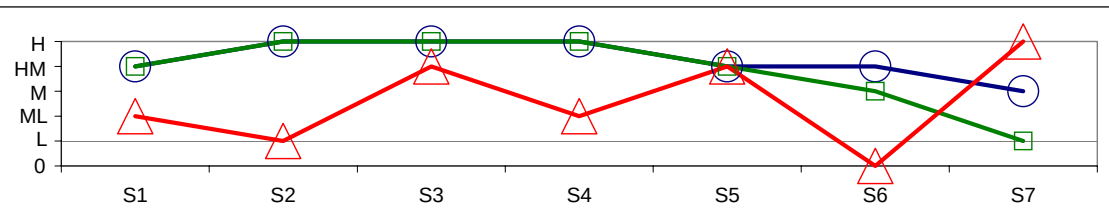
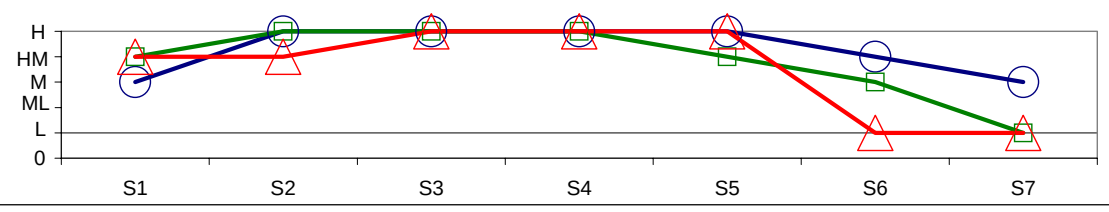
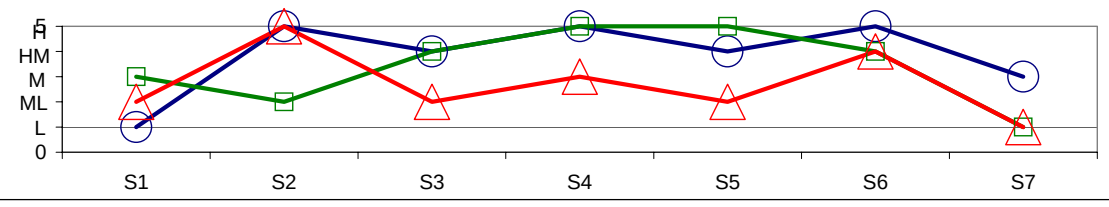
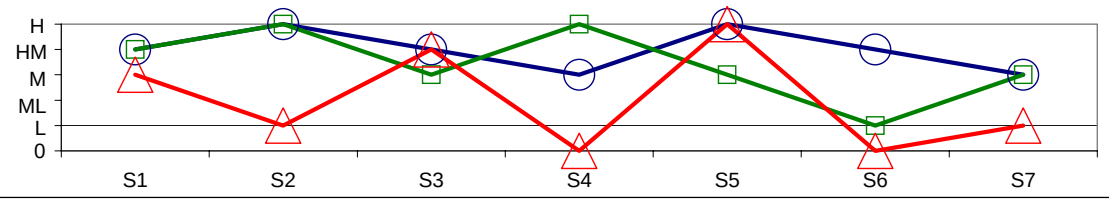
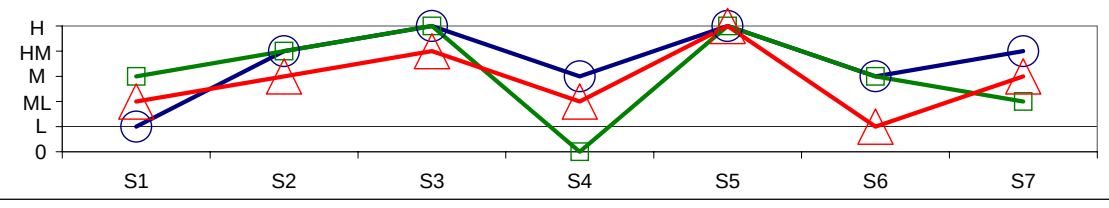
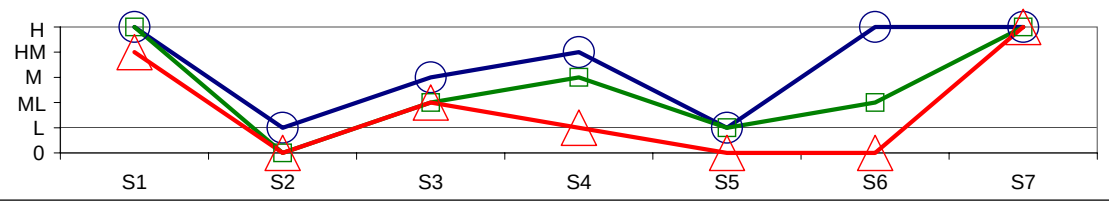
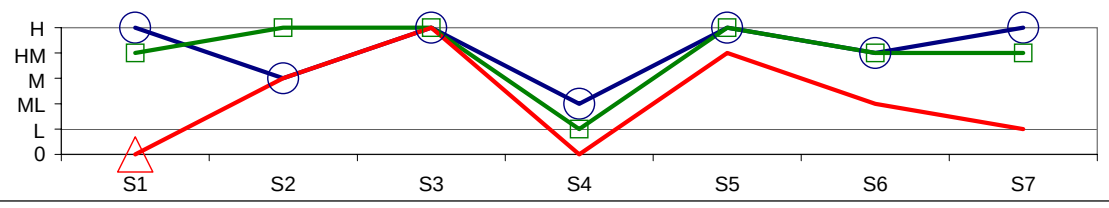
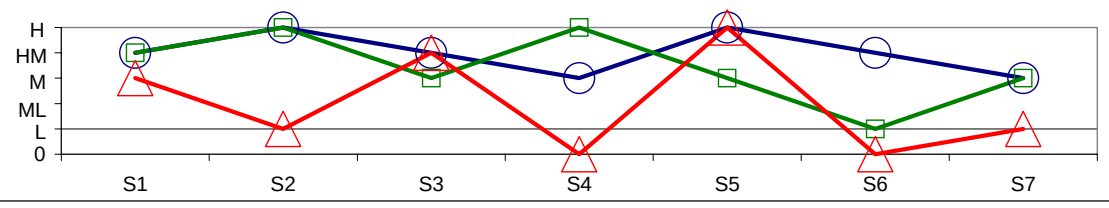
Strategy Influence on O1 (Recruitment & Selection)		
Strategy Influence on O2 (Training)		
Strategy Influence on O3 (Procedures/Permits)		
Strategy Influence on O4 (Planning/Risk Assessment)		
Strategy Influence on O5 (Incident Management & Feedback)		
Strategy Influence on O6 (Management)		
Strategy Influence on O7 (Supervision)		
Strategy Influence on O8 (Communication of Information/advice)		
Strategy Influence on O9 (Equipment Purchasing)		
Strategy Influence on O10 (Inspection & Maintenance)		
Strategy Influence on O11 (Pay)		
Strategy Influence on O12 (Welfare Conditions)		
Strategy Influence on O13 (Design)		
S1 – Contracting Strategy, S2 – Ownership & Control, S3 – Company Standards, S4 – Organisational Structure, S5 – Health & Safety Management, S6 – Worker Engagement, S7 – Company Profitability		

Figure 17 Influence of the Strategy level factors on the Organisational level

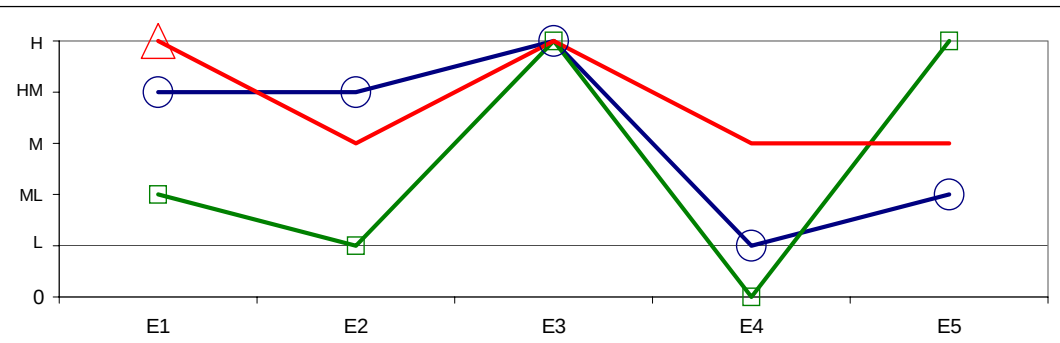
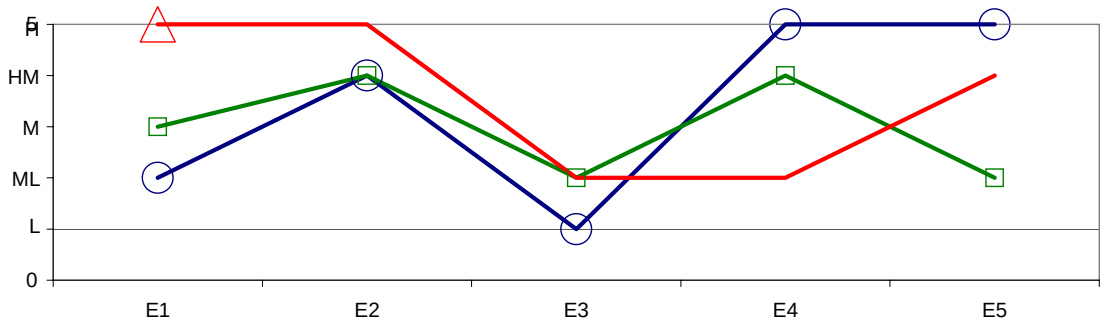
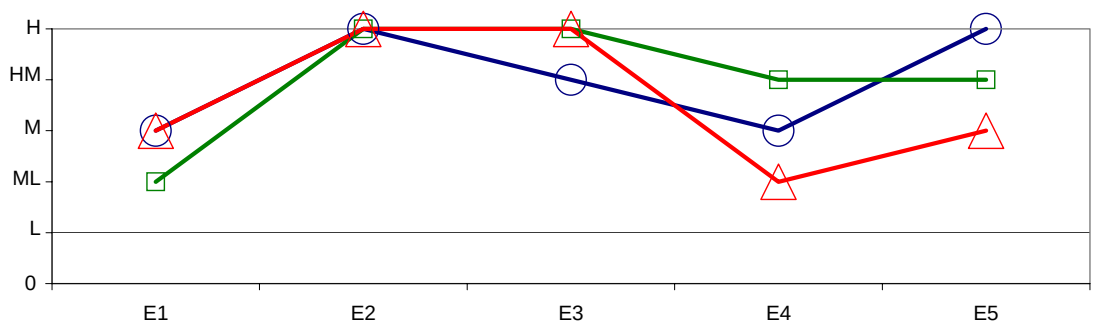
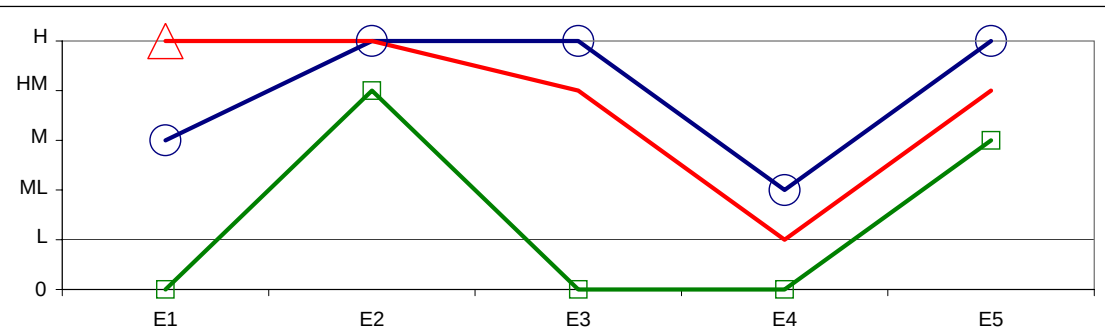
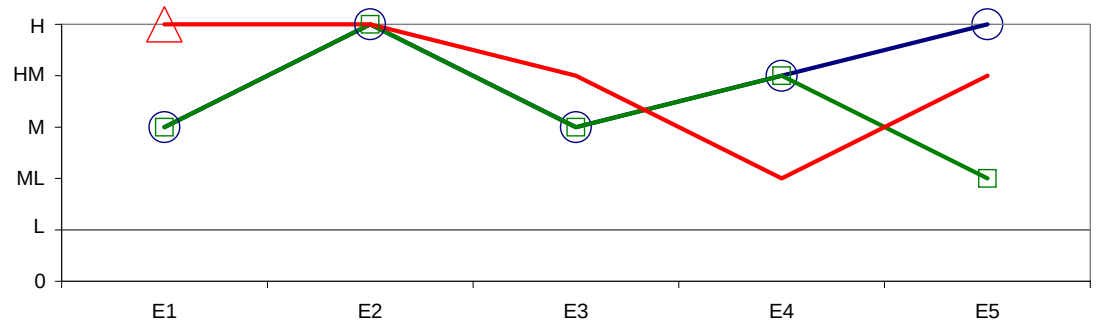
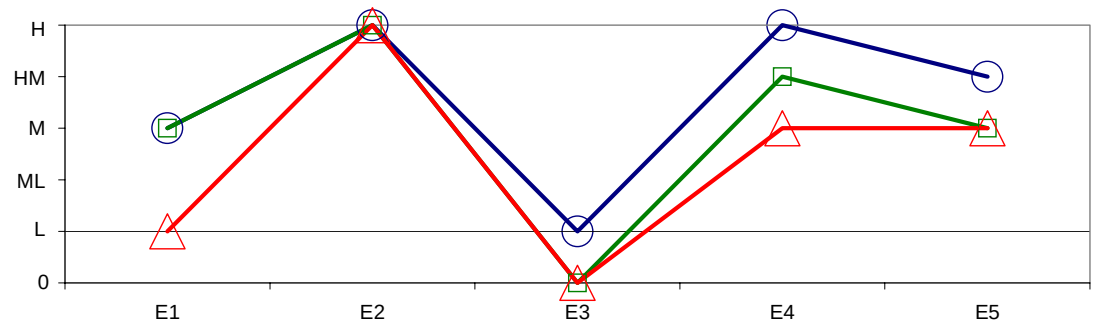
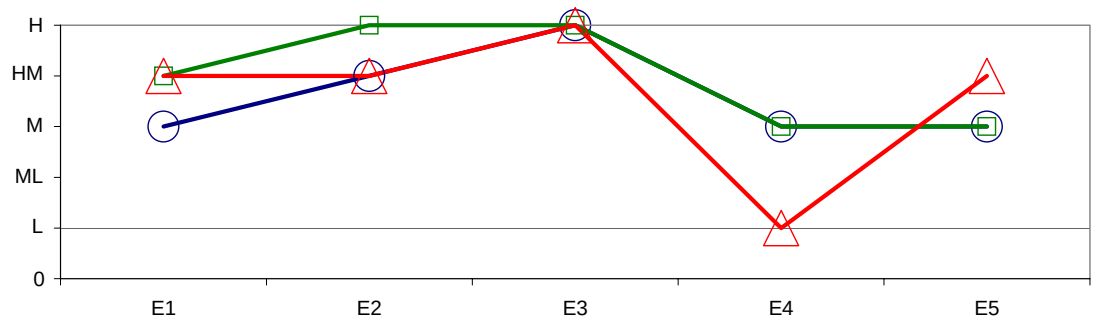
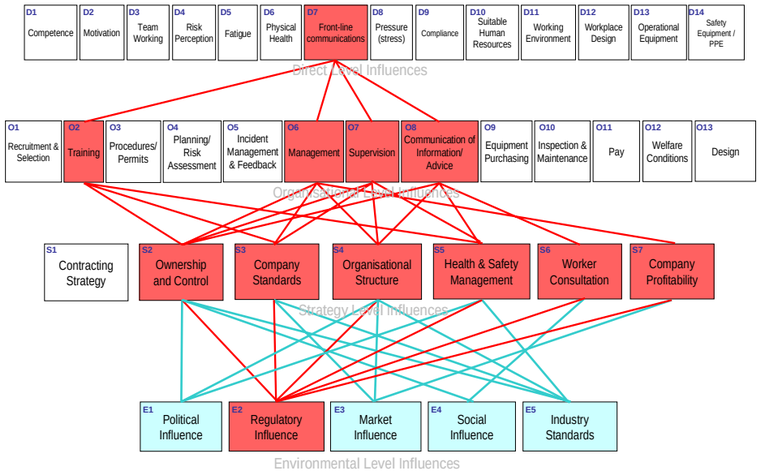
Environmental Influence on S1 (Contracting Strategy)		
Environmental Influence on S2 (Ownership & Control)		
Environmental Influence on S3 (Company Standards)		
Environmental Influence on S4 (Organisational Structure)		
Environmental Influence on S5 (Health & Safety Management)		
Environmental Influence on S6 (Worker Engagement)		
Environmental Influence on S7 (Company Profitability)		
E1 – Political, E2 – Regulatory, E3 – Market, E4 – Societal, E5 – Industry Standards		

Figure 18 Influence of the Environmental level factors on the Strategy level

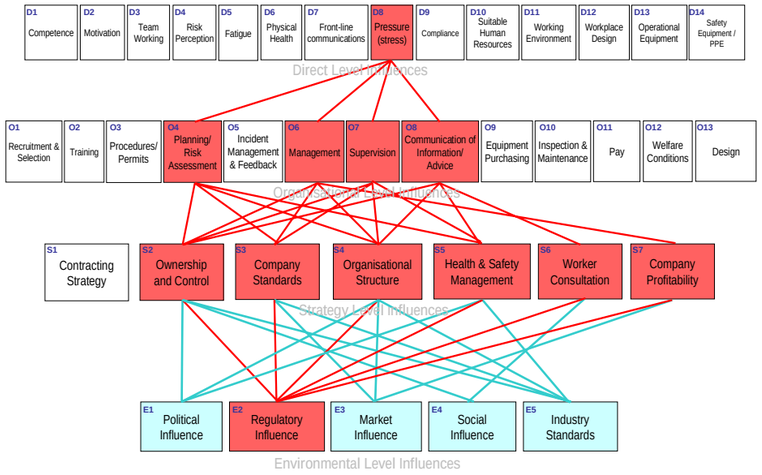
Figure 19 Potential influence pathways for *Direct* level factors

Pathways to front-line communications



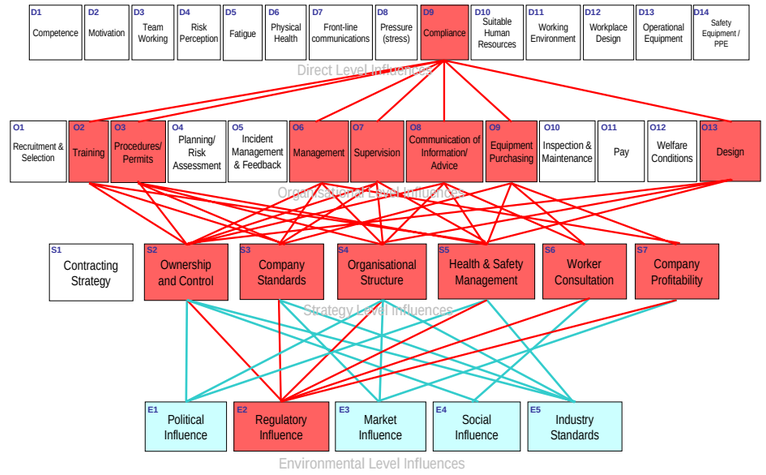
G

Pathways to pressure (stress)



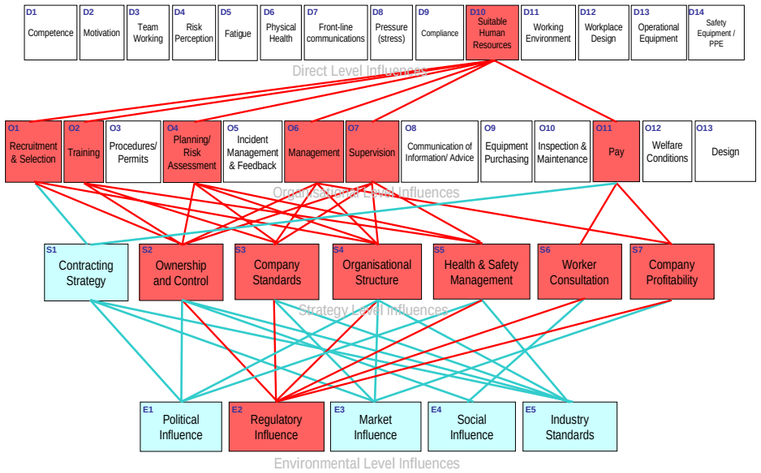
H

Pathways to compliance



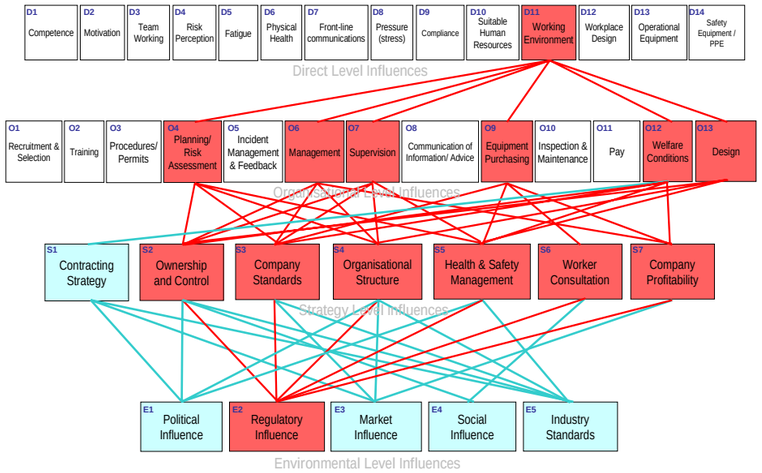
I

Pathways to suitable human resources



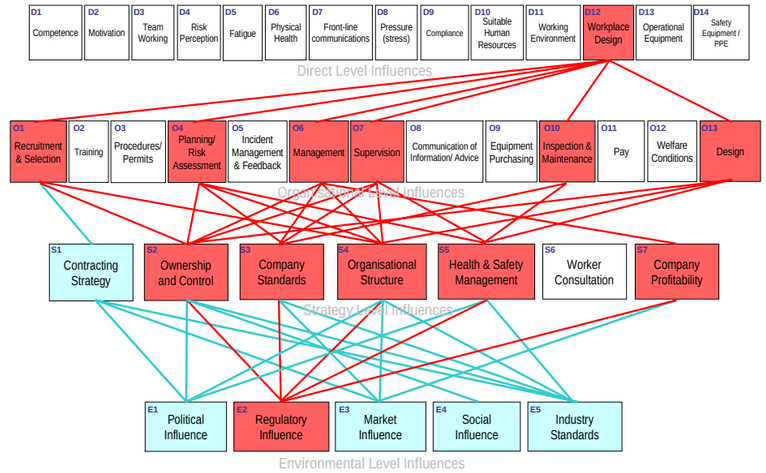
J

Pathways to working environment



K

Pathways to workplace design



L

Figure 19 Potential influence pathways for *Direct* level factors (contd.)

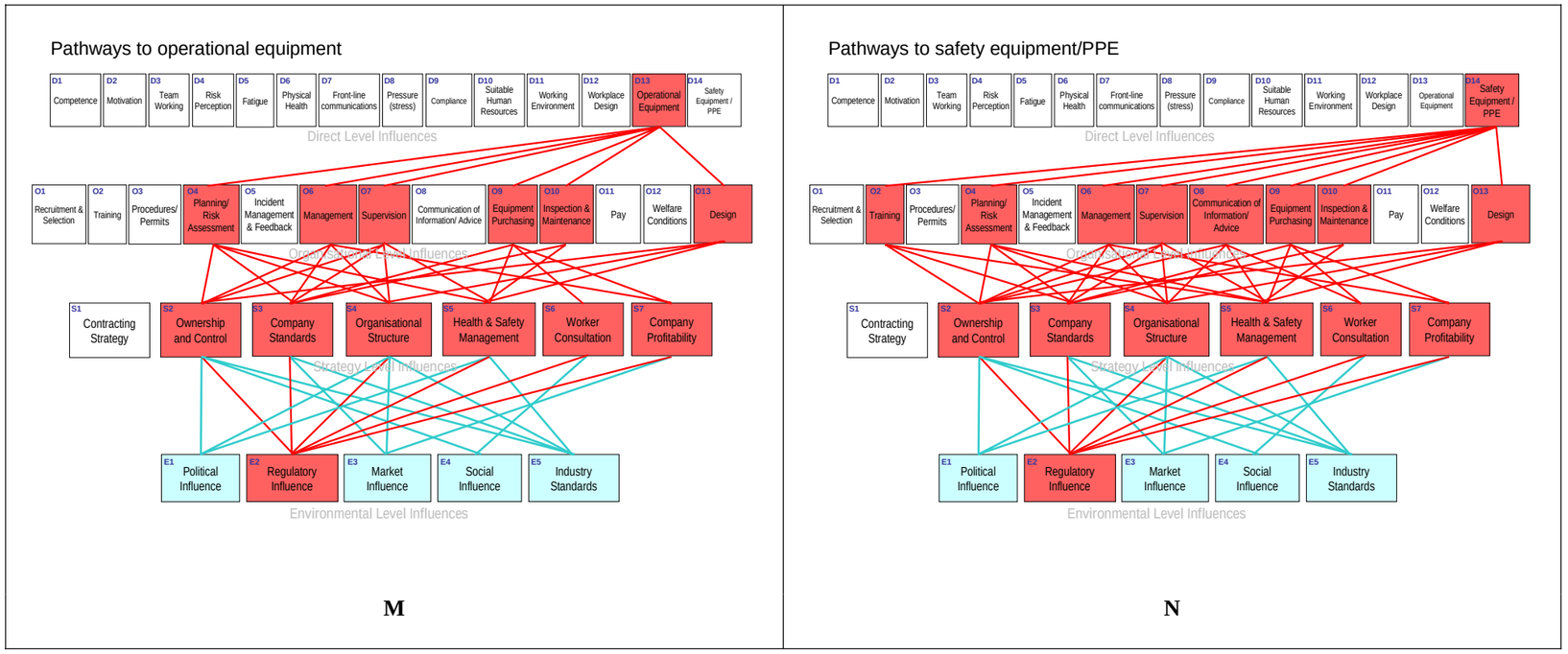


Figure 19 Potential influence pathways for *Direct* level factors (contd.)

APPENDIX A

QUESTIONNAIRE USED IN STRUCTURED INTERVIEWS