



# Construction Safety Management

Tim Howarth • Paul Watson



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and

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# List of Abbreviations

ALARP	(achieve a level of risk that is) as low as reasonably practicable
ACOP	approved code of practice
BS	British Standard
CDM2007	Construction (Design and Management) Regulations 2007
CONIAC	Construction Industry Advisory Committee
COSHH	Control of Substances Hazardous to Health
CSCS	Construction Skills Certification Scheme
CSR	Construction Skills Regulations
EA	enforcing authority
HSC	Health and Safety Commission
HSE	Health and Safety Executive
HSWA	Health and Safety at Work etc. Act 1974
IOS	International Standards Organisation
IOSH	Institution of Occupational Safety and Health
MCG	Major Contractors Group
MHSWR	Management of Health and Safety at Work Regulations 1999
OHMS	occupational health management strategy
OHSAS	Occupational Health and Safety Assessment Scheme
PPE	personal protective equipment
RIDDOR	The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995
WEL	Workplace Exposure Limit
WHSWR	Workplace (Health, Safety and Welfare) Regulations

# Introduction

The construction industry is a dynamic and innovative industry that delivers buildings and infrastructure for all aspects of commercial and domestic activity. It is a global industry that facilitates the development and maintenance of buildings, transport links and energy supplies. It is an industry that continues to deliver many incredible things, from ever taller sky scrapers to expansive bridges, impressive stadia and structures that rise out of land reclaimed from the sea.

This dynamic and innovative industry is faced with safety challenges on a project-by-project and day-by-day basis. The need to systematically plan and organise for effective health and safety management practice is regularly underlined as no justification can be, or is, given to construction projects, work activities, environments or business organisations that place the safety or health of people at risk.

This book strives to outline key principles and practices of construction health and safety management. It introduces and informs the reader of issues, concepts, legislation and practice pertinent to the sound development of knowledge requisite for effective construction health and safety management. In delivering this knowledge base the book is structured into nine chapters. Chapter one introduces and reviews the safety performance record of the UK construction industry. It serves to enable the reader to consider and evaluate the recent accident record and safety performance of the industry. Chapter two outlines the framework of UK construction health and safety law and its enforcement. It identifies categories of duties imposed by health and safety law, introduces the institutions and actions of health and safety enforcement, addresses when a prosecution might be pursued and considers the burden of proof of prosecution and possible resultant penalties.

Chapter three considers the Health and Safety at Work etc. Act 1974 and some key regulations. Chapter four focuses in on one key and very significant set of regulations, The Construction (Design and Management) Regulations 2007. These are outlined with reference to duties and responsibilities they impose upon the various parties to construction projects.

Chapter five considers site health and safety hazards and control measures and identifies a number of hazards common to construction

projects. The principles and practice of risk assessment are addressed in Chapter six. The legal basis for carrying out risk assessments is underlined and a methodology for carrying them out is presented.

Chapter seven considers the management of health and wellbeing within construction organisations. It emphasises that the development, implementation and period review of arrangements for the management of occupation health are critical within the construction industry. The key components of a principal contractor's health and safety management system are presented in Chapter eight. These components are identified as policy, organising, planning and implementing, measuring, reviewing and auditing.

Chapter nine is concerned with the culture of health and safety within construction organisations. It considers the concept and definition of safety culture and outlines the constituent components of safety culture along with three regarded stages of safety culture maturity or development. Practical initiatives and tools for promoting a positive safety culture are also highlighted.

Whilst this book serves to inform the health and safety knowledge and practice of the individual reader, it is recognised that another key component of enabling and delivering successful construction health and safety is the competence and commitment of *all* participants to a construction project throughout all project stages. Competence and commitment must be embedded and clearly evidenced not just in individuals, but also at an *organisational* level within the industry, across all its stakeholders. In the UK this is ever increasingly the case.

## **The move to industry-wide competence and commitment**

In recent years construction-related organisations have, as part of an appointment, selection or tender process, been subject to increased questioning and investigation regarding their competence and health and safety record. In order to compete commercially it is imperative that construction organisations are able to demonstrate that they possess suitable experience and competence along with a good health and safety record prior to being considered for selection or appointment for work. Without suitable experience, competence, resources and a good safety record a construction organisation can find itself excluded from further consideration for commercially attractive work.

The positive commitment of key industry stakeholders to health and safety can be evidenced in the development of a number of stakeholder 'codes, standards or charters' of safety practice for use on construction projects. These are additional to any requirements laid down by legislation and have the general aim of further extending



health and safety management best practice. Examples of significant initiatives that extend good practice and demonstrate commitment to health and safety management are provided by a client, a group of contractors and a large development project. These three initiatives are:

- Central government's 'Common Minimum Standards' for construction procurement
- 'The Health and Safety Charter' of The Major Contractors Group; and
- The Strategic Forum 2012 Task Group for the Olympic Games

These three 'initiatives' are worthy of further consideration due to their significant commitment to the extension of safety management practice.

### **The client's commitment – health and safety and central government's 'Common Minimum Standards' for construction procurement**

A significant value of UK construction procurement is accounted for by central government and the public sector. Such government procurement activity is informed by a set of mandatory 'Common Minimum Standards' for construction procurement. These standards have been facilitated by the Office of Government Commerce (OGC) which is tasked with driving up standards and procurement capability across central government.

The 'Common Minimum Standards' are

*mandatory across central government, including departments, executive agencies and the non-departmental public bodies for which they are responsible. They will apply to any procurement of a built environment carried out in England for a public sector client, whether through a capital procurement, a private developer scheme or a Public Private Partnership/Private Finance Initiative. (Common Minimum Standards for the Procurement of Built Environments in the Public Sector. Office of Government Commerce 2006)*

There are six Common Minimum Standards:

1. General Standard
2. Project and Programme Procurement
3. Health and Safety
4. Design
5. Historic Estate
6. Sustainability

With regard to health and safety, the requirements of the Common Minimum Standards are outlined in the following table.

Health and Safety Standard	Background
<p>1 All clients are to follow OGC's Achieving Excellence in Construction Procurement Guide 10, Health and Safety. In particular, points 2 to 5 below set out the key issues that must be followed</p>	
<p>2 Clients are to have in place systems to collect and analyse health and safety performance data (Accident Incident Rates) for all construction projects on which they have a duty of responsibility</p>	<p>The measurement process is to include the performance of all parts of the supply team (contractors, sub-contractors and designers)</p>
<p>3 Clients are to assess the health and safety performance and process of their shortlisted supply teams as a fundamental part of the pre-qualification assessment process</p>	<p>Suppliers with inadequate processes and/or poor health and safety performance records on comparable projects should be excluded from the tender lists. Feedback should be given to such suppliers to allow them to remedy such failings for the future</p>
<p>4 Clients are to include within all contracts involving construction a requirement for their constructors to be registered with a suitable site management/good neighbour scheme such as Considerate Constructors Scheme and to comply with the scheme's Code of Considerate Practice</p>	
<p>5 Clients are to include a contract clause requiring that all members of their supply teams who are workers on or regular visitors to a construction site are registered on the Construction Skills Certification Scheme (CSCS) or are able to prove competence in some other appropriate way</p>	<p>Whilst the CSCS scheme does not yet provide certification for all skills, as a minimum, site workers should hold the Operative level card, which includes basic safety training</p>

Table extracted from the *Common Minimum Standards for the Procurement of Built Environments in the Public Sector*. Office of Government Commerce 2006.



## **The contractors' commitment – The Health and Safety Charter of The Major Contractor's Group**

The Major Contractors Group (MCG) is a UK forum of senior executives from 12 large construction contracting organisations. The Group represents some £20 billion of construction work per annum. In 2005 the MCG published a 'Health and Safety Charter' for its members to commit to. This Charter strives to provide working environments that are safe and free from health hazards for both construction industry personnel and members of the public. Through the Charter MCG member companies are committed to:

- Leading behavioural changes on all our sites to eliminate accidents and incidence of ill health
- A fully qualified workforce
- An effective site-specific induction process before anyone is allowed to work on site
- All workers being consulted on health and safety matters in a way that engages them in improving health and safety
- Exchanging best practice and lessons learned in order to establish the root cause of incidents
- Raising awareness and insisting on the highest standards of personal protective equipment (PPE)
- Supporting the principles of the Considerate Constructors Scheme and ensuring that all sites offer good welfare facilities
- Publishing an annual report of progress made against the commitments in this Charter

(*Health and Safety News* (January 2005), Issue 1, Major Contractors Group. Available on-line at <http://www.mcg.org.uk/pdf/MCG%20health%20and%20safety%20VOL1.pdf>).

## **The project commitment – health and safety and the 2012 Olympic and Paralympic Games**

The Strategic Forum 2012 Task Group for the Olympic Games recognise 'health and safety' as one of six key areas which is vital to the delivery of the 2012 Olympic and Paralympic Games. The six key areas are detailed in the '2012 Construction Commitments', developed by the Strategic Forum. They embody principles which advocate industry improvement and the extending of current best practice.

With specific regard to health and safety, the '2012 Construction Commitments' state that:

*Health and safety is integral to the success of any project, from design and construction to subsequent operation and maintenance.*

- All designs will address health and safety issues and all projects will have a risk register
- 2012 construction projects will aspire to be injury- and incident-free
- Every project will have a strategy to deal with occupational health and provide full-time qualified medical staff on site
- All health and safety risks, including those relating to occupational health, will be assessed and managed, and action will be taken and communicated from inception to design
- Companies will sign up to and implement the Strategic Forum Health and Safety Code
- All Professional and site staff will hold Construction Skills Certification Scheme (CSCS) cards or equivalent

## Summary

Everyone in the UK has a right to a safe and healthy working environment. Whilst legislation serves to promote and protect this, systematic management and good practice initiatives facilitate the delivery of effective health and safety management. This book serves to support the study of principles and practices of construction health and safety management. It introduces and informs the reader of issues, concepts, legislation and practice pertinent to the development of knowledge and awareness required for effective construction health and safety management.

## References

- Common Minimum Standards for the Procurement of Built Environments in the Public Sector* (2006). Office of Government Commerce.
- Health and Safety News*, Issue 1 (January 2005), Major Contractors Group. Available on-line at: <http://www.mcg.org.uk/pdf/MCG%20health%20and%20safety%20VOL1.pdf>.

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# 1

## Issues Related to the Safety Performance of the UK Construction Industry

In the late 1990s the Egan report *Rethinking Construction* (1998) stated that 'the health and safety record of construction is the second worst of any industry'. Further the report suggested that 'accidents can account for 4 to 6 per cent of total project costs'.

Since the early 1990s, changes in safety management legislation and practice have been accompanied by a steady improvement in the safety performance statistics of the UK construction industry. This chapter explores the safety performance record of the UK construction industry since the Egan Report (1998) and introduces the reader to 'reportable injuries', the Health and Safety Executive and the meaningful evaluation of safety performance statistics.

### Learning objectives

By the end of this chapter the reader will be able to understand and evaluate:

- The statistical safety performance record of the UK construction industry
- The types of accident that occur within the UK construction industry
- The RIDDOR requirements to report and record accidents, dangerous occurrences and work-related disease
- The comparative health and safety record of employed and self-employed people within the UK construction industry with regard to reported over-3-day injuries, major injuries and fatalities

### Introduction

The UK construction industry is a significant industry in many respects. In terms of its size of workforce, it employs some 2.1 million people and accounts for around 9% of the total employment within the UK. In terms of output, the UK construction industry has, in recent years, had an annual turnover in excess of £150 billion.

**Table 1.1** Annual turnover of European construction sectors (millions of Euros (to nearest 50 million)). Based on statistics from Eurostats.

	2001	2002	2003	2004	2005
Belgium	1 800	1 950	2 100	2 900	4 000
France	144 800	148 550	156 150	169 000	178 900
Germany	168 900	157 000	147 600	142 400	137 350
Ireland	7 600	8 850	10 300	12 250	14 550
Italy	143 750	155 900	152 150	186 350	197 100
Netherlands	70 400	68 800	67 600	66 550	69 850
Poland	25 800	24 300	20 150	21 000	27 100
Portugal	1 200	1 150	1 250	1 500	1 200
Romania	4 700	5 250	5 700	6 950	8 800
Sweden	27 800	29 400	29 650	30 950	33 250
Spain	142 600	179 850	204 300	218 450	256 000
UK	210 850	226 550	220 250	234 050	244 700

When considering the wider European construction industry, the economic performance of the UK construction sector compares favourably. The UK has the second largest construction sector annual turnover within Europe, with a steady track record of year-on-year growth. Table 1.1 provides a comparative overview of the economic turnover of the construction sectors of 12 European nations. It also indicates the UK's growth in turnover for the 5-year period 2001–2005.

## Safety performance

The UK construction industry is successful in many respects, but with regard to safety it still faces numerous challenges on its journey to continuously improve its performance record whilst delivering increased volume and complex construction projects.

The safety performance of an industry is often expressed and evaluated in terms of its 'record' of safety incidents or ill health. Such records are compendiums of reported failure and reflect negative outcomes and incidents. That is not to say that such records do not have their value – indeed they most certainly do. Such records can be categorised, analysed and evaluated in order to identify common fail-



ings and thus inform the possible development of regulations, educational campaigns and practice guides. This can be very valuable at an industry-wide level. It is important not to get carried away with the belief that records of reported safety failings and ill health are sufficient measures of safety performance in themselves. They reflect an historical catalogue of failings, with many reasons and causes contributing to such failings. They do not reflect or evaluate current effectiveness of management provision or the current application of safety control measures and health monitoring within an organisation. Indeed there is no single, entirely satisfactory measure of health and safety performance. It is important to bear this in mind when considering accident and ill health records. Furthermore the potential for the under-reporting of accidents and ill health must be appreciated when considering statistical performance records.

### **Supporting health and safety success in UK industries – the HSC and the HSE**

The health and safety performance of UK industry is greatly assisted, guided and informed by the Health and Safety Commission (HSC) and the Health and Safety Executive (HSE). These organisations were established in the mid 1970s by the Health and Safety etc. Act 1974. The HSC and the HSE serve to promote awareness of health and safety, to provide advice and guidance to individuals and organisations, to enforce legislation and regulations and to advise and participate in the development of regulations. The HSE's website reports that: 'Britain's Health and Safety Commission (HSC) and the Health and Safety Executive (HSE) are responsible for the regulation of almost all the risks to health and safety arising from work activity in Britain' and that 'HSE's job is to help the Health and Safety Commission ensure that risks to people's health and safety from work activities are properly controlled'.

### **The reporting and recording of injuries, diseases and dangerous occurrences**

Importantly the HSC and HSE undertake to record and monitor UK construction industry health and safety statistics – The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR) makes it a legal requirement to report construction industry injuries, dangerous occurrences and work-related diseases to the HSE.

1 April 1996 saw the introduction of RIDDOR and the revising of health and safety reporting requirements for UK industries. The changes affected accident statistics for 1995–1996 and subsequent years. As such the HSE (1999) clarified changes to the reporting of statistics such that the term ‘accident’

*now includes acts of violence at work, and acts of suicide or trespass on railways or other transport systems.*

The list of reportable major injuries has also changed to include a wider range of fractures and amputations and certain dislocations. The reporting of non-fatal injuries suffered by members of the public was also expanded to include incidents when a person is taken from an accident to a hospital, rather than simply being reported if it is on the list of reportable major injuries contained within Schedule 1 of the regulations.

The introduction of RIDDOR and the reporting changes brought about must be considered when undertaking any comparison or evaluation of UK safety performance records pre and post 1996.

## **Reportable injuries**

Injuries reportable to the HSE under RIDDOR are subdivided into three categories:

- Over-3-day injuries, as suggested by the name, are those that lead to a worker’s absence from work for more than 3 days and must be reported to the HSE within 10 days
- Major injuries – those that may involve fractures, amputations, dislocations and others that may lead to 24 hours in a hospital. These must be reported without delay
- Fatal injuries – those resulting in death. These must also be reported without delay

Further to these three categories of reportable injuries, construction employers are also required to report to the HSE any dangerous occurrences or near misses that have happened, and any cases of work-related disease notified to them by an employee’s doctor. RIDDOR detail the specific nature of what constitutes a ‘reportable’ injury, disease or occurrence.

## **Major injuries**

Schedule 1 of RIDDOR defines ‘major injuries’ as:

1. Any fracture, other than to the fingers, thumbs or toes
2. Any amputation