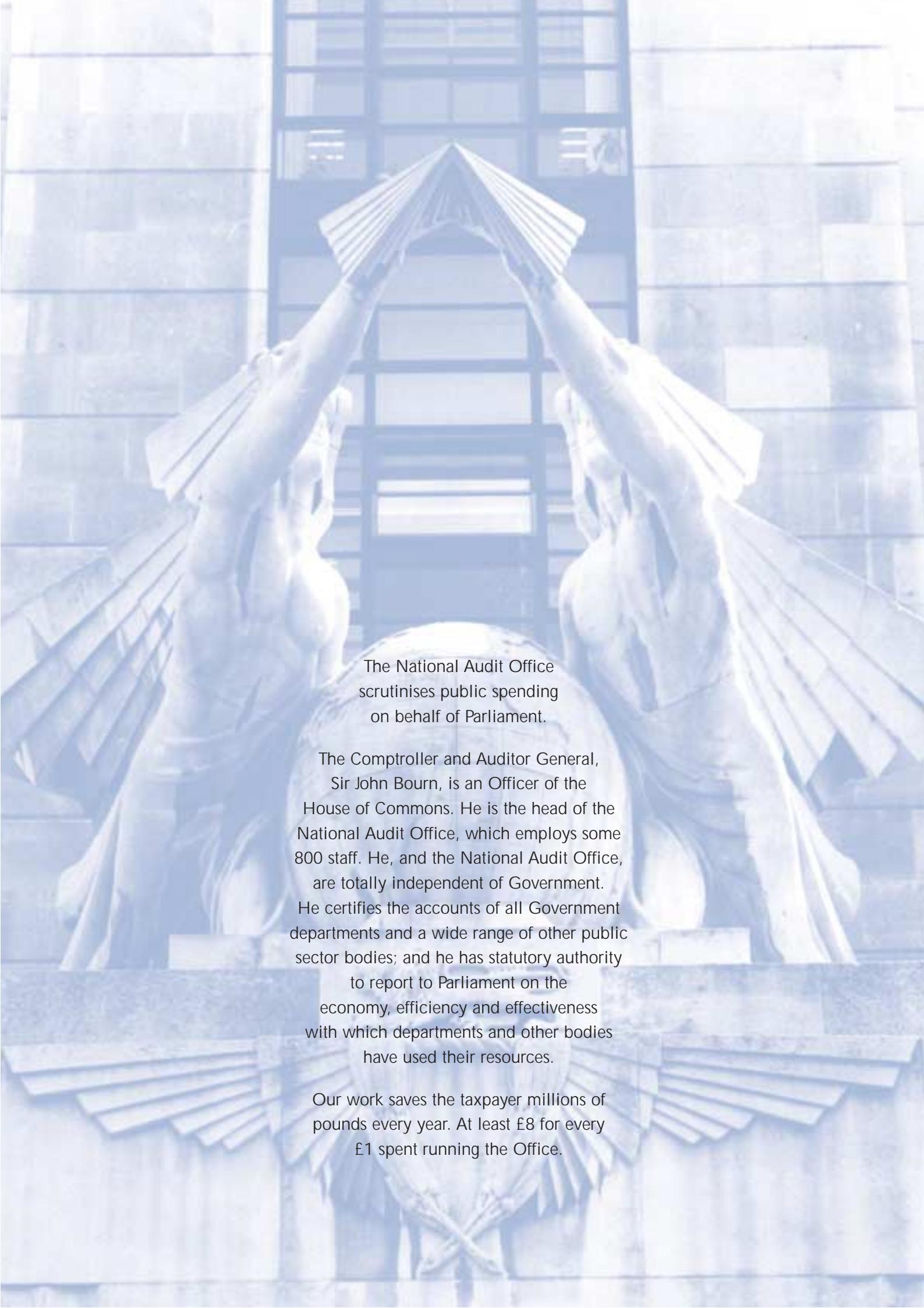


Health and Safety Executive

# Improving health and safety in the construction industry

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL  
HC 531 Session 2003-2004: 12 May 2004





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Health and Safety Executive

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This report has been prepared under Section 6 of the National Audit Act 1983 for presentation to the House of Commons in accordance with Section 9 of the Act.

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# executive summary

- Poor health and safety can result in death, major injury and ill health, and has a financial cost estimated at 2.6 per cent of gross domestic product. In June 2000, the Government and the Health and Safety Commission (HSC) launched *Revitalising Health and Safety*, a strategy intended to find new ways of reducing workplace injuries and ill health. The strategy set three targets for improvements in health and safety performance (**Figure 1**) which were subsequently adopted as Public Service Agreement targets.

## **1 The HSE's targets for reducing rates of injury and ill health**

*The government has set targets for improvements in workplace health and safety*

Target	Percentage reduction by	
	2004-05	2009-10
Reduce the incidence rate of fatal and major injury accidents	5 per cent	10 per cent
Reduce the number of working days lost per 100,000 workers from work-related injury and ill health	15 per cent	30 per cent
Reduce the incidence rate of cases of work-related ill health	10 per cent	20 per cent

*Source: Health and Safety Executive*

- The HSE has identified that, if it is to meet its Public Service Agreement targets, it needs to focus its efforts on hazards and sectors of the economy where major improvements in health and safety performance are required, either because the industry employs a large number of people or because the rates for injuries and ill health are high. Both these criteria apply to construction.
- The rate of accidents in the United Kingdom is the second lowest within the European Union and is considerably less than the average.<sup>1</sup> Despite this, in 2002-03, 226 workers in the United Kingdom were fatally injured. Of these, 71, some 31 per cent, were construction workers, the highest contribution to the overall total from any sector of the economy. A further 4,780 construction workers (4,098 of whom were employees) were reported as having suffered a major injury, the highest rate of major injuries per 100,000 employees and over three times the average for the main industry sectors. The industry's health record is also poor. For example, musculoskeletal disorders are prevalent and many of the deaths resulting from exposure to asbestos, an overall total of 3,500 a year, are to maintenance and construction workers.
- This report examines the approach taken by the HSE to improve the health and safety performance of the construction industry and the impact of this approach.

<sup>1</sup> European Social Statistics Accidents at work and related health problems, 1994-2000.

The HSE has to overcome a number of barriers and change attitudes within the industry to improve health and safety performance

- 5 The United Kingdom's construction industry contributes some £80 billion annually to gross domestic product and employs just under two million people across 168,000 firms. As well as being large, the construction industry is diverse and fragmented. Construction projects range from demolition through to new builds and maintenance work. They can also vary massively in scale - from work on domestic property lasting days to large infrastructure projects lasting years. Workers involved in the industry are spread across a wide range of professions. Around a third of workers are allegedly self employed, the highest proportion of any sector of the United Kingdom's economy.<sup>2</sup> Both the size and heterogeneous nature of the industry contribute to varying standards in health and safety and can act as a barrier to improvements to these standards.
- 6 Under health and safety legislation those who create risk are legally responsible for controlling and managing that risk. In addition, everybody has a responsibility to safeguard their own health and safety and that of others affected by their work. We found, however, that many industry stakeholders believed that not everyone in the industry is fully aware of or is carrying out their responsibilities and stakeholders' attitudes may have an impact on health and safety performance. For example, some public sector bodies that sponsor construction projects can focus too much on achieving the lowest price in a tender evaluation and not enough on issues like whole life costs including the health and safety not only of those required to construct, but also those who occupy and maintain a completed project. And many designers lack knowledge of their responsibilities under the Construction (Design and Management Regulations) 1994, with some believing they do not have any duties.

<sup>2</sup> Establishing a statistically valid link between employment status and health and safety performance is complex due to differential underreporting of accidents between the self-employed and those in employment and the difficulties in standardising for other factors that can influence performance, such as workers' attitudes and the approach to health and safety adopted by individual sites.



The HSE's current approach is to influence the stance to health and safety taken by the industry's stakeholders

- 7 The HSE was established by the Health and Safety at Work etc. Act 1974. It has a statutory responsibility to make adequate arrangements for the enforcement of health and safety law which it does by undertaking a range of activities such as inspecting workplaces, conducting research, investigating accidents and complaints, issuing guidance, and providing advice.
- 8 In April 2002, the HSE introduced the Construction Priority Programme, one of eight which focused on the key issues and industries where improvements were required if progress against its Public Service Agreement targets was going to be made. The programme aims to increase the impact of inspectors' work, not simply on sites but with other stakeholders in the supply chain such as clients, designers and suppliers. The programme also targets bodies and intermediaries that can influence change. To support the programme, the HSE established the Construction Division bringing together all the inspectors responsible for construction under the management of the Chief Inspector of Construction. A new Intervention Strategy was introduced which provided a more strategic focus for the HSE's work away from sites and with key duty holders and stakeholders, such as clients and designers. Stakeholders have welcomed the establishment of Construction Division and the broader focus of the HSE's work.
- 9 We found that by supplementing its usual site inspections with blitzes concentrating on particular risks the HSE has raised its profile within industry. It has also used its own research findings to identify workers most at risk and has supplemented its site-based work with initiatives targeted at workers, such as Safety and Health Awareness Days aimed at small and medium sized enterprises and sole traders and roadshows for workers. As yet, the HSE has not assessed whether it has succeeded in reducing accident rates in the areas it has targeted because the initiatives have not been in place sufficiently long and because they were not part of the HSE's formal evaluation plan for 2002-03. The HSE has succeeded in raising awareness of health and safety in construction among clients and designers. There are some signs that, once educated by the HSE on their responsibilities, clients are taking action to improve health and safety standards on their construction projects. Some designers still fail to acknowledge sufficiently their impact and responsibility for health and safety.

The HSE has difficulties in measuring changes against all of the construction industry's targets

- 10 In February 2001, at the construction industry summit, the industry set itself targets for improvements to its health and safety record. The targets were based on those set in *Revitalising Health and Safety* but were more challenging ([Figure 2](#)).
- 11 In January 2003, the HSE reported that the incidence rate of fatal and major injuries had fallen by 12 per cent in comparison with the baseline, a rate substantially above the 1 per cent year-on-year all industry reduction sought by Revitalising Health and Safety but, short of the 40 per cent 2004-05 target set by the industry at the 2001 summit. The HSE has published figures for ill health and days lost in construction from a self-reporting survey in 2001-02 and will publish corresponding figures for the years 2003-04 (in Autumn 2004) and 2004-05 (in Autumn 2005). These will permit some assessment of progress against these two targets. The HSE needs to work with the industry to translate these targets into more tangible and measurable goals, which help to promote increased responsibility within the supply chain and at site level.

## 2 The construction industry's targets for improvements in its own health and safety record

*The construction industry's targets for improvements to health and safety performance are based on, but are more challenging than, the HSE's Public Sector Agreement targets*

Target	Construction industry targets - percentage reduction		Percentage reduction for construction industry <i>As at 2002-03</i>	National targets - percentage reduction	
	By 2004-05	By 2009-10		By 2004-05	By 2009-10
Reduce the incidence rate of fatal and major injury accidents	40%	66%	5% against baseline figures for 1999-2000	5%	10%
Reduce the number of working days lost per 100,000 workers from work-related injury and ill health	20%	50%	Baseline figures established in 2001-02 <sup>1</sup>	15%	30%
Reduce the incidence rate of cases of work-related ill health	20%	50%	Baseline figures established in 2001-02 <sup>1</sup>	10%	20%

### NOTE

- 1 Figures are unavailable for 1999-2000, the year the industry set itself as its baseline. The HSE has established a baseline for 2001-02, using data from a number of sources. Surveys in 2003-04 and 2004-05 will provide data to assess against this baseline.

*Source: National Audit Office summary of national and construction industry targets for improvements in health and safety performance*

## The HSE needs to measure the impact of its strategies

- 12 The HSE's current approach is focused on a long term and sustained reduction in the number and severity of accidents and the cases of ill health in the construction industry. Assessing the impact of the HSE's strategies is however difficult, partly because of the long term nature of the intended impact and the need to account for the impact of other influences on health and safety performance; the difficulties in establishing baseline data; and the characteristics of the industry.
- 13 Despite these challenges, the HSE should develop its evaluations of its strategies in order to measure its own performance and that of the industry to provide examples of good practice that could be usefully disseminated to the industry.

# RECOMMENDATIONS

**14** We recommend:

- i The HSE should work with the construction industry to translate the high level industry targets into lower level, more tangible, measures which are easier to assess. These measures should be linked to the issues that the HSE has identified as priorities - for example, the reduction in the number of falls from heights, a principal cause of death and serious injury. (Paragraph 1.14)
- ii The HSE should develop the focus and nature of some of its recent initiatives to target other areas requiring action. For example, extending its current campaign aimed at government clients down to smaller, arm's length public bodies; to the wider public sector and to private sector clients; building on its Safety and Health Awareness Days by tackling designers who have a key part to play in promoting health and safety in construction at the project development stage; by seeking improved education of designers in health and safety matters (for example, by promoting health and safety in relevant examination syllabuses); and by raising the profile of health and safety at the design stage by seeking greater publicity for good design practice and to highlight bad practice. (Paragraphs 2.9, 2.14, 3.13 and 3.18)
- iii To enhance the effectiveness of its blitz programme, the HSE should, as part of an integrated and coordinated campaign-based approach within its broader intervention strategy, increase the number of follow-up interventions with firms visited under such programmes. The HSE should also seek to maximise the potential impact of the blitz programme through publicity and engagement with intermediaries. (Paragraph 3.13, with more detailed recommendations relating to the blitz programme outlined in paragraph 3.14)
- iv The HSE should develop a programme of evaluations of its various initiatives which assesses a selected number, but not all, of its initiatives each year. Some of the key components of such assessments are outcome improvements (ascertained, for example, from measures of, say, reductions in injuries from specific causes); changes in stakeholder awareness and practice (for example, through independent surveys of employers and employees, and through follow up site visits), and measurement of the impact of publicity and media success particularly in relevant trade and local media as well as at a national level (for example, measuring changes in stakeholder attitudes). The HSE's evaluation of its Safety and Health Awareness Days provides a good example for such evaluations. (Paragraphs 2.13 and 2.14; and 3.14)
- v To increase the industry's compliance with the Construction (Design and Management) Regulations 1994, the HSE should increase its use of blitzes and Safety and Health Awareness Days. (Paragraphs 2.3 and 2.6)
- vi Parent Departments should work with their agencies, Non Departmental Public Bodies and all bodies that receive grants from government for construction projects, as well as the HSE, to implement best practice and improve health and safety. (Paragraphs 2.7 - 2.9)
- vii The HSE should work with organisations that influence the procurement of construction work in the public sector (for example, the Office of Government Commerce and bodies such as the Local Government Taskforce and the Audit Commission) to ensure that health and safety is considered as part of the process of improving value for money in public procurement and reducing whole life costs by public sector bodies. (Paragraphs 2.7 - 2.9)

## IAN WASN'T KILLED IN A BUILDING SITE ACCIDENT. HE JUST LOST HIS LIFE.

What Ian Whittington did though he used to love working on his own would kill anyone. He is now paralysed from the neck down. But just like the thousands of workers that tragic in the building trade each year, he could have easily been avoided. That's what's at stake here - only your employer is better you start now. So it's time to take action. For more information call HSE on 0845 76 81 111. **SAFE WORKS IT'S DOWN TO US ALL.**





# Part 1

## The performance of the HSE and the construction industry

- 1.1 This part of the report examines the construction industry's health and safety record and the role of the Health and Safety Executive (HSE) in improving it.
- 1.2 We found that the construction industry has a poor health and safety record and that while it has shown some improvement over the last decade it compares badly with other sectors of the United Kingdom's economy, although it compares well with construction industries in other major industrial countries. We identified a number of industry characteristics - such as fragmentation - and stakeholder attitudes that can act as a barrier to improvements in health and safety performance. The HSE has recently developed its approach to the construction industry to try to bring about the culture change required for lasting improvements in health and safety performance. For example, it has sought to complement its site based inspections with a more strategic focus on influencing the approach of stakeholders. The HSE has difficulties tracking some trends in health and safety performance and assessing whether the construction industry will meet two of its three targets for performance improvements.

### Poor health and safety has a financial as well as a human cost

- 1.3 Accidents on construction sites can have a devastating effect not only on workers but also members of the public (**Figure 3**). Injuries can be fatal or can lead to a permanent disability which prevents the individual working again, or require treatment, time off work, or both. Poor health and safety also has a significant financial cost. Employees suffer through lost income and additional expenses, and employers have to pay the absent injured worker; they may incur a number of other costs such as legal fees, fines, an increase in insurance premiums, administration and recruitment costs, and damage from both injury and non-injury accidents. Society as a whole also bears costs through increased burdens on health and social services, lost production across the economy, and the cost of

investigating accidents. The HSE has estimated that, for Great Britain, the cost to society as a whole of workplace accidents and work-related ill health could be as much as £18.1 billion or 2.6 per cent of gross domestic product.<sup>3</sup> Improving health and safety performance could lead to considerable human and financial gains, benefiting all parts of society.

### The construction industry has a poor health and safety record compared with other sectors of the United Kingdom economy

- 1.4 The rate of accidents in the United Kingdom's construction industry is the second lowest of any of the member states of the European Union and is considerably less than the average.<sup>4</sup> However, its health and safety record is poor compared with other sectors in the United Kingdom's economy. In 2002-03, 71 construction workers were killed on building sites in the United Kingdom and 4,098 construction employees were reported as having suffered a major injury. **Figure 4** shows that the industry's rate of fatal injuries per 100,000 employees is five times as great as it is across all industries and is the second highest of the main industry sectors. The construction industry's poor safety record is not new. For example, over the last decade, the rate of fatalities in the construction industry has always been at least four times as high as the average for all industries.
- 1.5 The construction industry also has a poor health record (**Figure 5**). There is a much greater prevalence of musculoskeletal disorders (with around 88,000 workers affected) than in most other industries and the rates of asbestos and mesothelioma (3,500 deaths a year, many of which are construction and maintenance workers) and cement dermatitis are relatively high. Around 500,000 construction workers are at risk from vibration white finger<sup>5</sup> from using vibrating tools, and the industry's workers suffer twice the national rate of noise induced hearing difficulties.

<sup>3</sup> *The cost to Britain of workplace accidents and work related ill health in 1995-96.*

<sup>4</sup> *European Social Statistics: Accidents at work and related health problems, 1994-2000.*

<sup>5</sup> *Working with vibrating hand machinery such as drills causes vibration white finger. The fingers turn white due to an intermittent lack of blood supply. There can be pain, numbness or tingling. The condition can progress over a number of years and can become irreversible.*

### 3 Causes of accidents in the construction industry and their consequences

*Accidents in the construction industry have a variety of causes*

Cause of accident	Example
Contact with moving machinery	A roadworker was killed when he was caught up in the rotating cutters of a road planing machine. He was working on the repair of private roads at a large industrial site. The contractor had failed to maintain a safe system of work.
Struck by moving, or flying, or, falling object	A piling foreman was killed when he was struck by the auger head unit of a piling rig. The quick release mechanism had failed, and so it was decided to dismantle the equipment using an excavator fitted with lifting chains, an unsafe system of work. The unit fell during this work.
Struck by moving vehicle	A pedestrian was killed when she was struck by a skip lorry as it reversed across a pavement into a site entrance. The project involved the demolition of a school and construction of housing. Precautions were inadequate for reversing and segregation of pedestrians.
Injured while handling, lifting or carrying	A demolition worker dislocated his left shoulder whilst loading scrap angle iron into a bin. The weight of the piece of scrap was estimated to be approximately five kilograms.
Slips, trips and falls on the same level	A pedestrian tripped over rubble from a road works excavation left outside the pavement barriers. She sustained a broken ankle, because of a failure to control access by members of the public. She later died from complications.
Falls from a height	A plasterer was killed when he fell through a sheet of plasterboard which had been used to cover an opening in the floor provided for dropping refuse. He jumped down from some staging onto the temporary plasterboard cover which collapsed. The work involved the conversion of a mill into domestic flats. The job had not been properly thought through.
Trapped by something collapsing or overturning	A demolition worker aged 36 was killed as he was demolishing a gantry which was part of a dockside installation. The pre-weakened columns collapsed prematurely and fell on him. An unsafe system of work was being used.
Contact with electricity or electrical discharge	Two street lighting workers aged 22 and 32 were electrocuted when the old lighting column they were removing contacted overhead electric lines. The work was part of a term maintenance contract for the local authority. An inadequate risk assessment had been carried out.

*Source: Health and Safety Executive*

### 4 Fatal and major injuries for 2002-03<sup>1</sup>

*Construction has one of the worst safety records of any sector of the United Kingdom's economy*

Sector	Fatal injuries to workers <sup>2</sup>		Major injuries to employees <sup>3</sup>	
	Number	Rate per 100,000	Number	Rate per 100,000
Construction	71	4.0	4,098	374.8
Agriculture, hunting, forestry, and fishing	36	9.5	601	269.7
Extractive and utility supply industries	3	1.5	422	211.7
Manufacturing industries	41	1.1	6,809	195.5
Service industries	75	0.3	16,496	81.9
<b>All industries</b>	<b>226</b>	<b>0.8</b>	<b>28,426</b>	<b>113.0</b>

#### NOTES

1 Figures are provisional and are based on injuries reported to all enforcing authorities.

2 'Worker' refers to employees and the self-employed.

3 Because of underreporting, data on major injuries to self-employed workers are too inaccurate to aggregate with those of employees.

*Source: Health and Safety Executive*

## 5 Occupational health issues arising in the construction industry

*Workers in the construction industry can suffer from a range of occupational health issues*

Hand arm vibration syndrome	A labourer suffered from Hand Arm Vibration Syndrome as a result of operating percussive hammers when working on roads and footpaths. It was thought that lack of control of the sub contractor's health and safety performance gave rise to the ill health.
Asbestos related disease	A building services manager was diagnosed as having a mesothelioma cancer. The man, aged 60, had worked in the building services industry all his working life and it was thought that this had led to a significant exposure to asbestos.
Musculoskeletal disorder	A floor layer suffered from beat knee in the form of swollen knees and a lump on one knee which had to be removed in hospital. While kneepads had been provided to prevent the condition, they may not have been used regularly.

*Source: Health and Safety Executive*

- 1.6 The 2001-02 self reported work related illness survey estimated that 137,000 people whose current or most recent job in the last eight years was in the construction industry suffered from an illness that they believed was caused or made worse by their job, resulting in the loss of an estimated 2.8 million working days.

**Legally, everybody has responsibility for the health and safety risks that they create**

- 1.7 The Health and Safety at Work etc. Act 1974 imposes general duties on all employers and the self-employed to ensure the safety of their workers and others affected by their work, including members of the public. It requires individual workers to take reasonable care of their own health and safety and that of their co-workers. Secondary Regulations make these general duties more explicit. One of the principal sets of regulations governing the construction industry is the Construction (Design and Management) Regulations 1994 which provides a framework for the procurement and management of construction projects and makes explicit the roles and responsibilities of clients, designers, principal contractors and others in the supply chain (**Figure 6**).

- 1.8 The Health and Safety at Work etc. Act 1974 established the Health and Safety Commission (HSC) and the HSE. Both are Non-Departmental Public Bodies sponsored by the Department for Work and Pensions. The HSC's mission is to ensure that risks to health and safety from work activities are properly controlled by those responsible for creating those risks. The HSE has a statutory responsibility to make adequate arrangements

for the enforcement of health and safety law. It fulfils its obligations by undertaking a range of activities, including the physical inspection of workplaces, and the investigation of complaints, accidents and ill health. It enforces standards, usually by advising on compliance with the law, but sometimes through enforcement action - for example, issuing improvement or prohibition notices<sup>6</sup> - and prosecution of offenders.<sup>7</sup> It also disseminates good practice by providing guidance and advice; and carries out research.

- 1.9 In 2002-03, the HSE's net expenditure was £202 million. Of this, the HSE spent £111 million on securing compliance with the law and a further £26 million on improving knowledge of and understanding of health and safety issues through the provision of information and advice.<sup>8</sup> The HSE employs some 4,000 staff, around 74 per cent of whom are either inspectors or other professionals or specialists.

**The HSE has difficulty tracking trends in injury rates because of underreporting**

- 1.10 The HSE needs good quality information to target its resources and analyse the construction industry's health and safety performance. This information is also essential for evaluating the impact of the HSE's and the industry's initiative. Under the Reporting of Injuries, Disease and Dangerous Occurrences Regulations (RIDDOR), it is a legal requirement to report certain accidents.<sup>9</sup> While the HSE is confident that all fatal accidents are reported, it has estimated from surveys that employers only report around 46 per cent of reportable *non-fatal* injuries and the self-employed report less than five per cent.

<sup>6</sup> An improvement notice can be served for failing to comply with legislation, and is intended to deal with underlying issues, such as the provision of training and general management. The notice recipient is given a set period to make the required improvement. A prohibition notice is served when, in the opinion of the inspector, there is a risk of serious personal injury and the inspector requires an activity or activities to cease.

<sup>7</sup> The Health and Safety Commission's enforcement policy governs the use of these sanctions and discretion is exercised based on an assessment of risk and aggravating and mitigating factors.

<sup>8</sup> The remaining £65 million was spent on modernising and supporting the regulatory framework, promoting risk assessment and technical knowledge, and operating statutory schemes.

<sup>9</sup> The Reporting of Injuries, Disease and Dangerous Occurrences Regulations apply to all sectors of the economy, not just construction.

## 6 Key responsibilities of duty holders' roles and responsibilities under the Construction (Design and Management) Regulations 1994

*Duty holders must ensure that there is adequate consideration to health and safety at all stages of a project*

Duty holder	Responsibility
The client must:	<ul style="list-style-type: none"> <li>■ make timely appointment of the planning supervisor and the principal contractor</li> <li>■ satisfy itself that the designers, planning supervisor, the principal contractor and other contractors are competent and adequately resourced to carry out their duties under the CDM Regulations</li> <li>■ obtain and provide relevant health and safety information about existing risks</li> <li>■ allow sufficient time for the design and construction work to be carried out</li> <li>■ ensure that construction does not start until the construction phase health and safety plan has been prepared</li> <li>■ ensure that the project health and safety file is available for future construction work</li> </ul>
The designer or architect must:	<ul style="list-style-type: none"> <li>■ take reasonable steps to ensure that their clients are aware of their duties under the CDM Regulations</li> <li>■ prepare designs with adequate regard to health and safety and the information provided by the client</li> <li>■ co-operate with the planning supervisor and with any other designers so that each of them can comply with their duties, including providing information for the health and safety file</li> </ul>
The principal contractor must:	<ul style="list-style-type: none"> <li>■ satisfy themselves that the designers and contractors they engage are competent and adequately resourced</li> <li>■ ensure that there is a suitable construction phase health and safety plan and promote co-operation between all contractors</li> <li>■ restrict entry to the site to authorised people</li> <li>■ enforce site rules</li> <li>■ provide relevant information to contractors</li> <li>■ ensure workforce consultation on health and safety</li> <li>■ ensure that people receive information and training on health and safety</li> </ul>
Contractors must:	<ul style="list-style-type: none"> <li>■ satisfy themselves that any contractor or designer they engage is competent and adequately resourced</li> <li>■ co-operate with the principal contractor</li> <li>■ provide information to the principal contractor about risks to others created by their work</li> </ul>

*Source: National Audit Office analysis of Construction (Design and Management) Regulations*

1.11 The HSE compensates for these problems by, for example, using information from the Labour Force Survey and qualitative evidence such as inspectors' reports. It uses RIDDOR and the Labour Force Survey to measure trends in the construction industry's health and safety record. However, comparing and combining data from different sources creates difficulties in consistency, and the survey information provides a limited opportunity for more detailed analysis at the industry level due to sample size. To address these limitations, the HSE has secured funding to pilot a two-tier work place survey which will involve the construction industry. The survey would include interviews with management and the workforce at a sample of workplaces to ascertain accident and ill health levels. Given the current problems with RIDDOR and the existing survey based-data, such an approach could be a more accurate and cost effective way of obtaining more reliable and representative data on accident and ill health trends. The HSE could tailor the survey's questions more to its own needs to ensure consistency year-on-year.

1.12 The HSE should review the cost effectiveness of maintaining and using its current data sources. Given the level of underreporting under RIDDOR and the limitations of existing survey data, the HSE should look for, or develop alternative sources of data such as

sample based surveys which better meet its intelligence needs. We recommend that if HSE does continue to make use of RIDDOR data then it:

- investigates what motivates some to report accidents and not others;
- seeks to improve the reporting levels of the self-employed;
- looks into incentives and disincentives for reporting injuries, with a view to changing the attitudes and behaviour of non-reporters.

It is not yet clear whether the construction industry will meet the targets it has set itself for improvements to its health and safety performance

1.13 In June 2000, the Government and the HSC launched *Revitalising Health and Safety*, a strategy to find new ways of reducing rates of injury and ill health. The strategy included three targets for improvements to health and safety performance. In February 2001, the Deputy Prime Minister and the Chair of the HSC called a construction industry health and safety summit at which the industry announced its own, more challenging, targets to improve its health and safety record. Both sets of targets are shown in [Figure 7](#).

## 7 Measuring the construction industry's progress

*The construction industry's targets for improvements to health and safety performance are based on, but are more challenging than, the HSE's Public Sector Agreement targets*

Target	Construction industry targets - percentage reduction		Percentage reduction for construction industry As at 2002-03	National targets - percentage reduction	
	By 2004-05	By 2009-10		By 2004-05	By 2009-10
Reduce the incidence rate of fatal and major injury accidents	40%	66%	5% against baseline figures for 1999-2000	5%	10%
Reduce the number of working days lost per 100,000 workers from work-related injury and ill health	20%	50%	Baseline figures were established in 2001-02 <sup>1</sup>	15%	30%
Reduce the incidence rate of cases of work-related ill health	20%	50%	Baseline figures were established in 2001-02 <sup>1</sup>	10%	20%

### NOTE

- 1 Figures are unavailable for 1999-2000, the year the industry set itself as its baseline. The HSE has established a baseline for 2001-02, using data from a number of sources. Surveys in 2003-04 and 2004-05 will provide data to assess against this baseline.

*Source: National Audit Office summary of national and construction industry targets for improvements in health and safety performance*

1.14 In January 2003, the HSE reported<sup>10</sup> that the rate of fatal and major injuries within the industry was 'at best falling slowly' and that '.for the present, factual evidence of industry-wide improvement remains hard to come by'. It concluded that the combined rate of fatal and major injuries had fallen significantly in the two years since the introduction of the Revitalising Health and Safety strategy and was 12 per cent below the base line figure established for 1999-2000. However, the current rate of progress is insufficient to achieve the interim industry target in three years time of a 40 per cent reduction by 2004-05. For the remaining two targets, figures were not available to assess performance (Figure 7).

1.15 Since April 2003 the HSE has made quarterly reports to the Health and Safety Minister on key performance indicators to assess the overall impact of its initiatives:

- The number of construction workers holding Construction Skills Certification Scheme Cards.
- The number of articles appearing in five key trade publications that deal with Construction Priority Programme issues.
- The number of improvement notices issued as an indicator of tracking underlying causes of accidents.
- The number of small firms attending Safety and Health Awareness Days and workers attending Working Well Together Roadshows.
- The number of Strategic Inspections Plans in place, for example for Government as client, and large projects.

1.16 These will be helpful as indicators of growing awareness of health and safety within the construction industry and of the HSE's efficiency. However, they are only indicative, or surrogate, indicators and, in themselves, they will not indicate whether there is the change in behaviour which is necessary to improve health and safety. For example, measuring the number of Strategic Inspections Plans in place is an indicator of the HSE's efficiency and effectiveness in setting these up. It does not reveal whether they are leading to changes in behaviour by those who work in the industry. This can only be done by in depth evaluation of the action taken by those targeted by the HSE and how this has had an effect on health and safety performance.

The HSE faces difficulties measuring changes in occupational health at industry and sector level

1.17 The HSE has published baseline figures for 2001-02 for the incidence of work-related ill health and for days lost due to both workplace injury and ill health in the construction industry.<sup>11</sup> It has not been able to establish baseline figures for 1999-2000, the first year of the target's life. We identified two main reasons for the difficulties the HSE faces in measuring progress against the industry's ill health targets. First, occupationally-induced diseases with long latency periods may not show up for many years. For example, the effects of exposure to asbestos may only become evident twenty to forty years later. Second, because of the nature of work-related ill health, the HSE is not able to rely solely on self-reported data. It uses data collected from the Labour Force Survey to estimate the number of people who believe that their condition was caused or made worse by work. However, the surveys' methodologies and questions have changed over time, making it difficult to assess changes, the results are dependent on a person's perceptions (which could be influenced if publicity is given to a particular illness) and therefore bias, and they are subject to large sampling errors at the industry level. The HSE is therefore considering commissioning its own survey into occupational health in the construction industry. Because of the possible biases in self-reporting, the HSE uses other sources of intelligence such as compensation data, death certificates and data generated from medical surveillance schemes at consultant level to help assess the overall incidence of work-related ill health. Data relating to the construction industry is available from most of these sources.

<sup>10</sup> *Health and safety performance in the Construction Industry - Progress since the February 2001 Summit*, Health and Safety Executive, January 2003.

<sup>11</sup> Source: Labour Force Survey and associated Self Reported Work-related Illness surveys for 2000-02. HSE has planned a further stream of statistics on ill health and days lost, including Labour Force and Self Reported Work-related Illness surveys in 2003-04 and 2004-05 and a new Workplace Health and Safety Survey (HSE's own survey of employers) in 2004-05.

## The nature of the industry and the attitudes of stakeholders act as a barrier to improvement in health and safety performance

1.18 The United Kingdom's construction industry, which contributes around £80 billion each year to gross domestic product, is diverse and fragmented which can lead to health and safety messages taking time to reach all parts of the industry. It has some two million workers annually across an estimated half a million sites. And the nature of activity (new builds, modifications, maintenance, and demolition work) and scale of work (domestic work such as loft conversions through to infrastructure projects such as the Channel Tunnel Rail Link) varies enormously. Nearly 90 per cent of the 168,000 companies working in the industry employ seven workers or fewer.<sup>12</sup> Workers in the industry are involved in a large number of trades and specialisms, from civil engineers and engineering contractors to demolition specialists, asphalt and tar sprayers to plasterers and floor and wall tiling specialists.

1.19 The construction industry is also mobile. As construction projects move through their various stages, different trades and firms will move on and off site. Workers travel nationally and internationally to work on contracts for short periods of time. In a survey of construction workers published in October 2003<sup>13</sup>, 41 per cent of workers in the construction industry had been with their current employer for less than a year; and 52 per cent had been working on their current contract for six weeks or less.

1.20 The industry's fragmentation and mobility can impact adversely on health and safety in a number of ways. Working practices are difficult to standardise, as different firms and workers will have their own preferred work methods. The number of sites and firms makes it difficult for the HSE to raise standards solely through site inspections. And the mobility of small firms in particular makes them difficult to track and therefore take follow up action. At a project level, the constant change of workers on site, as projects move through different phases, makes it challenging for site managers to enforce appropriate safety standards, manage the construction process and achieve a safe sequence of events.

## Many within the industry are failing to fulfil their responsibilities for health and safety

1.21 As outlined in paragraph 1.7, everyone has a legal responsibility to manage the health and safety risks that they create. The HSE is concerned that, too often, the industry can be too reliant on the HSE's advice and guidance. Stakeholders told us that not everyone who works with or in the industry is either fully aware of their responsibilities or carrying them out appropriately. It was noticeable in our discussions with stakeholders that while some could note examples of other stakeholders not discharging their responsibilities, few were willing to admit that they themselves had problems which they were seeking to address.

1.22 Against this background, however, we found that there is increased awareness among some within stakeholder groups such as clients, designers and workers of their health and safety responsibilities, and there are examples of good practice among them. At the construction industry summit, construction firms, trade associations and others drew up and announced action plans for improvement. For example, federations in the Construction Confederation have set targets for workers and subcontractors' workers to demonstrate competency in a trade, which includes a health and safety test. The federations are aiming to have fully qualified workforces by various target dates between 2004 to 2010.

## The HSE's work in the construction industry is intended to overcome these barriers and change attitudes to health and safety

1.23 To achieve the national targets for improvements in health and safety performance (Figure 7), the HSE identified eight priority programmes (**Figure 8**) covering hazards and sectors where major improvements in health and safety performance are required, either because they are industries which employ large numbers of workers, or where the incidence rate of injuries or ill health is high. Both of these apply to construction. The HSE added a ninth priority programme in 2003-04, 'government setting an example'.

<sup>12</sup> Department for Trade and Industry.  
<sup>13</sup> Options Employment Survey.

## 8 The HSE's nine priority programmes for 2003-04

*The HSE is targeting specific sectors and hazards to achieve improvements in health and safety for the economy as a whole*

Hazard area	Sector
Falls from heights	Agriculture
Workplace transport	Construction
Musculoskeletal disorders	Health services
Stress	Government setting an example
Slips and trips	

*Source: National Audit Office*

1.24 The aim of the Construction Priority Programme is to achieve long-term cultural change in attitudes and behaviours of all those in the supply chain who influence what happens on site and by increasing the impact of the HSE's inspection work, including its work to influence national bodies and intermediaries to bring about change. In April 2002, the HSE introduced a number of changes to support the programme. It:

- **established Construction Division**, bringing together some 150 geographically dispersed construction inspectors under the direct management of the Chief Inspector of Construction ([Figure 9](#));
- **introduced a new Intervention Strategy** ([Figure 10](#)), supported by annual work programmes, which focused on particular issues, and identified priority target audiences and new techniques for reaching them;
- **held a broad based dialogue with the industry to identify new ways to improve its health and safety**, including the development and publication of a discussion document considering some of the broader policy, business and societal drivers impacting on health and safety performance; and
- **continued its involvement in other change initiatives within the construction industry**. For example, the HSE is closely involved in the work of the Strategic Forum for Construction, which is promoting an industry improvement agenda that will also have benefits for health and safety.

## Our scope and methodology

1.25 We last reported on the HSE's work in February 1994.<sup>14</sup>

That report focused on its work with the construction industry and with major hazards. This report focuses solely on the HSE's work to bring about improvements in the construction industry's poor health and safety performance. If the HSE is to meet its targets for the economy as a whole, the construction industry will need to show considerable improvement. In 2005, the HSE is due to report progress against the targets set at the construction industry summit. This report assesses progress towards meeting these targets so far.

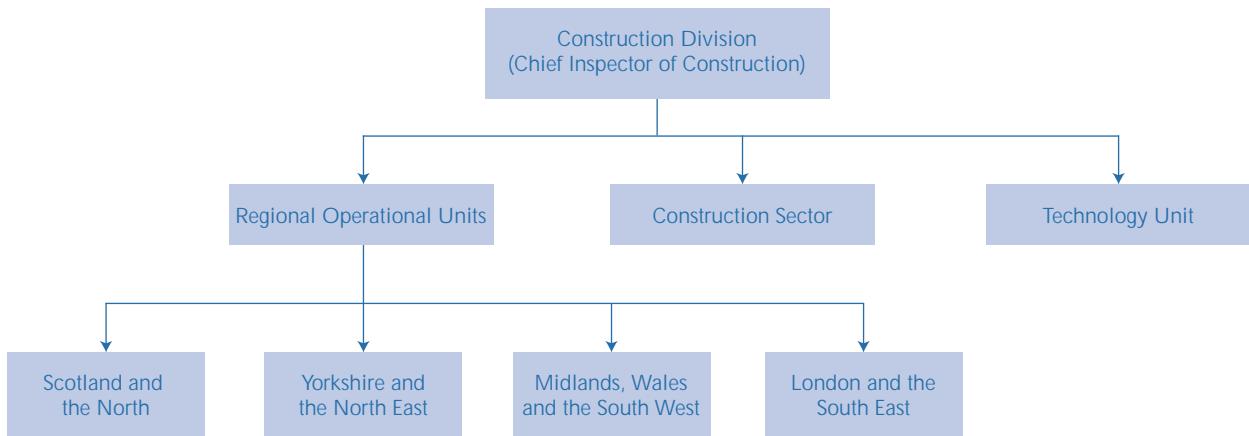
1.26 We examined three issues:

- **The barriers to change in the industry** by holding discussions with HSE's staff and key industry players to identify trends, areas of major concern and how to overcome barriers to change. We also reviewed studies on workers' attitudes to health and safety.
- **The appropriateness of the steps taken by the HSE to improve the construction industry's health and safety performance** by analysing data on health and safety trends and consulting stakeholders targeted by the HSE.
- **The impact of the HSE's work on the construction industry's health and safety performance** by consulting experienced evaluators on how the HSE might evaluate its impact in the future and whether it is doing so effectively now.

1.27 The results of our examination are set out in Parts 2 and 3 of this report which cover, respectively, the HSE's work to influence health and safety before work begins on site and its work to ensure that sites are healthy and safe. In both parts, we examine the barriers to change in the industry and the work the HSE is undertaking to overcome these barriers. We also identify further steps that the HSE should make to improve its impact.

## 9 Organisational structure of HSE's Construction Division

*Construction Division has four operational units, supported by a policy and a technology centre*



*Source: Health and Safety Executive*

## 10 Audiences, techniques, and themes in the 2002-03 Intervention Strategy and its associated annual work programmes

*Construction Division has extended its range of contacts and techniques*

Target audiences	New techniques	Themes
<ul style="list-style-type: none"> <li>■ Large projects and Construction Design and Management duty holders</li> <li>■ Government as client</li> <li>■ Small and medium sized enterprises and sole traders</li> <li>■ The workforce</li> </ul>	<ul style="list-style-type: none"> <li>■ Rolling programme of tailored visits to large companies designed to deliver a specific, pre-determined outcome</li> <li>■ Visits to manufacturers of poorly designed products which cause health and safety problems</li> <li>■ Capturing lessons learnt from finished buildings by work with other agencies (delayed until 2003-04)</li> </ul>	<ul style="list-style-type: none"> <li>■ Transport</li> <li>■ Work at height</li> <li>■ Manual handling</li> <li>■ Noise</li> <li>■ Hand Arm Vibration Syndrome</li> <li>■ Welfare and Dermatitis</li> <li>■ Asbestos</li> </ul>

*Source: National Audit Office summary of the Health and Safety Executive's intervention strategy and project plans for 2002-03*



# Part 2

## Influencing health and safety before work begins on site

- 2.1 The approach taken to health and safety by clients and designers can influence a project's health and safety record as much as decisions taken on site. This part of the report examines the HSE's work to change the attitudes of these two stakeholders.
- 2.2 We found that the HSE has, since the creation of Construction Division and the introduction of the Intervention Strategy, consolidated its work with stakeholders responsible for a project's pre-construction phases to provide a more focused and strategic approach to addressing the barriers to improvements and influencing the behaviour of clients and designers. The HSE's work with these stakeholders was viewed as a necessary and welcome development by stakeholders. The initiatives have raised the HSE's profile with designers and generated some baseline data from which progress can be measured. A number of government departments could point to changes that they had made following contact with the HSE. The HSE should adapt its initiatives in future years to increase their potential impact. For example, by recognising that public sector construction projects are sponsored by third tier organisations, such as higher education institutions, as well as by central government departments and by increasing enforcement action with designers.

Clients, including those in the public sector, do not always consider health and safety issues enough when awarding contracts

- 2.3 All construction projects start with a decision made by a client, which set the project's budget and timetable, selects the procurement method, and appoints others such as designers and contractors. As well as having legal responsibilities under the CDM Regulations (see Figure 6), a client can also set the project's tone including the approach to health and safety. We also found that many within the industry saw clients as being

key to improvements in health and safety but that there was a variation in the degree of responsibility that clients took for health and safety on a project by influencing the behaviour of other stakeholders. And three quarters of the respondents to the HSE's discussion document<sup>15</sup> saw clients' 'quickest - cheapest' approach as the main challenge to good health and safety standards. And the Strategic Forum for Construction<sup>16</sup> has identified client leadership as a key driver for change in the industry.

- 2.4 The public sector (central and local government and beyond) commissions approximately 40 per cent of construction work in the United Kingdom. Public sector clients therefore have a good opportunity to influence the approach taken to health and safety. Ministers, at the construction industry summit in February 2001, committed government to acting as an exemplar in promoting better management of construction work, including health and safety. The Office of Government Commerce, with the HSE's help, has issued guidance to government departments as an integral part of its Achieving Excellence in Construction initiative, on how to promote good health and safety standards within their projects.<sup>17</sup> Public sector clients should select suppliers - designers and contractors, for example - which have an established commitment and demonstrable performance in health and safety. Contracts should be awarded to suppliers which can show project specific proposals for managing health and safety, including treating all workers the same way regardless of their employment status. See Appendix 4 for actions which government clients should take to improve the procurement and management of construction work.
- 2.5 Many industry stakeholders told us that the public sector did not make the most of this opportunity to improve health and safety. The Major Contractors Group and the National Contractors Federation<sup>18</sup> recently surveyed their members on the public sector's use of the Office of Government Commerce's guidance. They concluded

<sup>15</sup> Revitalising Health and Safety in Construction September 2002.

<sup>16</sup> Created in July 2001 by Ministers from the Department of Trade and Industry to promote changes within the construction industry.

<sup>17</sup> Achieving Sustainability in Construction Procurement: Sustainability Action Plan (June 2000) and Achieving Excellence Through Health and Safety (October 2001).

<sup>18</sup> The Major Contractors Group represents the majority of the top construction companies in the UK, each with an annual turnover in excess of £300 million; the National Contractors Federation represents seven construction companies with an annual contracting turnover in excess of £75 million.

that, in general, the standard is below that necessary if the public sector client is to act as an exemplar. They believe that health and safety competes poorly with other issues at the tender evaluation stage and that public sector contracts are still too often awarded on price only. In our report *Modernising Construction*<sup>19</sup> we identified six essential requirements for all construction projects if value for money is to be achieved. One of these is that contractors should be selected on the basis of achieving long term sustainable value for money and not just the lowest price.

## Designers could do more to address health and safety issues at the early stages of a project's life

2.6 Research completed by the HSE and by the European Foundation for the Improvement of Living and Working Conditions<sup>20</sup> suggests that decisions made before building work begins, including, for example, during design, account for up to 60 per cent of fatal accidents (**Figure 11**). However, the HSE has found that many designers<sup>21</sup> show little or no interest in or understanding of the health and safety implications of their work, despite their explicit duties under the CDM Regulations.<sup>22</sup> We found that the overwhelming majority of stakeholders supported this view. For example, the Major Contractors Group believes that in many cases, poor health and safety can be traced back to poor design; and the Strategic Forum for Construction

told us that designers' education on health and safety issues needs to be improved and welcomes the revision of the CDM regulations. The Federation of Master Builders was also critical, saying that of all the stakeholders, designers had made the least progress in improving health and safety. The Royal Institute of British Architects, however, questioned whether there were sufficient incentives for designers to 'design out' hazards, as this would lead to an increase in costs to the designer which could not necessarily be passed on to the client (for example, under fixed fee or percentage contracts).

## The HSE's initiative to influence government clients could usefully be extended to others

2.7 The HSE has targeted eight public bodies<sup>23</sup> centrally to encourage the adoption of best client practice in relation to health and safety. To assess the value of the HSE initiative, we contacted members of the Office of Government Commerce's Property and Construction Panel and discussed the impact of public sector clients with stakeholders in the industry. Departments were positive about the contact and could point to improvements in awareness or process. **Figure 12** highlights examples of the impact of this initiative. To date, the HSE has focused attention at head office level on the larger spending and more proactive government clients. Many in the industry were complimentary about the efforts made by these departments to give more consideration to health and safety.

## 11 Examples of how decisions taken by designers can influence health and safety during the construction and operational phases of a project's life

*Designers can have an impact on health and safety performance once a building has been constructed*

The designer of a lecture room in a hospital education facility had specified that the light bulbs should be replaced using a stepladder, but no consideration had been given as to how such a ladder could be positioned between the rows of fixed seating in the lecture room.

A ventilation ducting system in a leisure complex and swimming pool had been designed so that all ventilation duct access points were situated over the poolside, not over the pool.

A designer had specified the use of roof anchors to provide a safety harness attachment point for cleaning the roof-mounted windows on a three storey domestic property. The anchor points could not be reached from the roof access point. Following an intervention from the HSE, the designer agreed to review the design of the roof windows to allow them to be cleaned from within the building.

*Source: Health and Safety Executive*

<sup>19</sup> HC 87 Session 2000-2001.

<sup>20</sup> From Drawing Board to Building Site 1991.

<sup>21</sup> The term 'designer' includes architects, architectural technicians, structural engineers, temporary works designers, specialist contractors and manufacturers.

<sup>22</sup> Revitalising Health and Safety in Construction, September 2002.

<sup>23</sup> Defence Estates; National Health Service Estates; Highways Agency; Network Rail; London Underground Limited; Scottish Executive; Welsh Assembly Government; Department for Environment and Rural Affairs (including the Environment Agency).

## 12 The impact of the HSE's work on some of the bodies targeted by the public sector

*The HSE has helped some government departments change their approach*

Department (Expenditure on construction - £m)	Comments Result of contact with HSE (reported by Department)
NHS Estates (£2,400 million)	Assured NHS Estates that it is progressing towards meeting the HSE's requirements and identified individuals within HSE it could work with.
Highways Agency (£1,700 million)	Clarified corporate roles and responsibilities for health and safety; reviewed activity on high speed roads; improved approach to risk assessment. HSE helped to focus effort and clarify priorities and gave message to suppliers that it wants clients to improve performance. It also created momentum for improvement.
Defence Estates (£1,500 million)	Greater awareness of health and safety at all levels in the organisation. Development of an ongoing contact with the HSE.
HM Prison Service (£275 million)	Increased awareness of problems. The Prison Service has rolled out a national asbestos awareness programme including training and a re-survey of the whole estate.
Department for Work and Pensions (£189 million)	Has reviewed with its service provider arrangements for managing asbestos during construction under the Job Centre Plus programme.

*Source: National Audit Office*

2.8 Some government departments' direct expenditure on construction projects is small in comparison with the capital expenditure that they funds through smaller bodies, such as the lottery distributing bodies and the Arts Council. In these cases, responsibility for health and safety on the project rests with the body commissioning the project. The Department for Culture, Media and Sport told us that its Non-Departmental Public Bodies, such as the lottery distribution boards, worked very much at arm's length and its influence over operational issues, such as health and safety, was therefore limited. Some stakeholders viewed smaller clients - such as local authorities, schools or the recipients of grants for arts or sports projects - as needing attention to raise standards.

2.9 The HSE contact with publicly funded construction projects should reflect the range of capital funding mechanisms that exists - from construction work sponsored directly by central government departments to projects commissioned by third tier organisations. As well as considering broadening the scope of the initiative across the range of different types of government client, the HSE should consider whether this type of intervention would be appropriate for private sector clients.

## The HSE is working more strategically with designers

2.10 The HSE has recently placed a more strategic emphasis on its work to influence designers. Inspectors from the HSE's Scotland and Northern England Unit met the designers with lead responsibility for work at height issues on a total of 123 construction projects with an estimated value of £910 million. The aim of the initiative was to identify good and bad practice, raise awareness of the HSE's role, and improve inspectors' confidence and competence in dealing with designers. The initiative's objectives were to inform and learn rather than to enforce, although recommendations for improvement were made in a significant number of cases.

2.11 The HSE concluded that around one third of designers demonstrated little or no understanding of their responsibilities and their knowledge of the relevant legislation was often limited.<sup>24</sup> Many lacked knowledge of their duties; and some did not accept they even had any duties. A number abdicated their responsibilities leaving the project's principal contractor to deal with the consequences. A significant number failed to consider the practical detail of how to construct and maintain their design safely. The low level of compliance with requirements from this duty holder is a concern.

<sup>24</sup> Particularly the Construction (Health, Safety and Welfare) Regulations 1996, which apply to all building and civil engineering contractors.

2.12 We contacted some of the designers involved in the initiative. Their views, summarised in **Figure 13**, demonstrated the potential value of the initiative, but also highlighted the problems that the HSE faces in changing the behaviour of some within this group.

2.13 We found that the HSE's designer initiative was a useful way for it to widen its impact on the supply chain. It has raised awareness of legal responsibilities amongst a group of duty holders who are difficult to target through routine inspections and of designer issues amongst its inspectors. It has created a baseline from which to measure progress. It also highlighted the difficulties in engaging with this group and ensuring that they understood their responsibilities for the health and safety of workers on sites. The HSE is developing a programme of further work with designers, involving bodies such as the Construction Industry Council, Royal Institute of British Architects, organisations such as Commission for Architecture and the Built Environment and schools of architecture.

2.14 The HSE should build in evaluation mechanisms to assess its longer term impact and consider rolling the designer initiative out across its remaining regional units. It should also, on future initiatives aimed specifically at designers, take enforcement action where standards are too low, especially now that the designer community is aware of the HSE's heightened interest. As part of this, the HSE should revisit a number of the designers it contacted as part of the first initiative to see what changes have been introduced and what improvements have resulted from these changes. And the HSE should reconsider how it publicises the outcomes from this work to maximise its impact across the design community.

The HSE needs to ensure that its contacts with duty holders on large projects lead to tangible changes on site and within companies

2.15 Despite being in force for ten years, compliance with the Construction (Design and Management) Regulations 1994 (see paragraph 1.7) is still patchy. While stakeholders generally supported the principles underpinning the regulations and suggested that they had raised awareness of health and safety, some told us that the regulations are often regarded only as paper work issues and have added to bureaucracy and administrative costs rather than improved health and safety.

2.16 In 2002-03, inspectors met the key duty holders - clients, designers, contractors, and so on - on over 50 projects which were particularly large, novel or risky to discuss their responsibilities under the Construction (Design and Management) Regulations 1994 and plans for fulfilling them. To assess the success of this work, we discussed ten of the projects with the relevant inspector and duty holders and examined the effectiveness of and the changes that had resulted from the HSE's contact (Appendix 1 lists and describes the ten projects we examined).

2.17 We found that the HSE's inspectors involved on the project and the project's duty holders welcomed the interventions. The HSE's inspectors told us that these types of interventions were a good way to gain coverage across a large number of firms. As such, the intervention could lead to a multiplier effect - where the behaviour of smaller firms is influenced by the HSE's work with the principal contractor and client. In some cases, both the HSE and the duty holders were unable to identify examples of practical changes and benefits that had arisen from the contact (**Figure 14**). In some instances, this was due to timing, as many projects had not started the construction phase. Given the length of time

### **13 The HSE's initiative targeted at designers - the views of designers**

*The HSE's work with designers has highlighted the difficulties it faces working with this stakeholder*

- Early contact in the project was helpful, as changes could be made relatively easily.
- Publicity before the initiative was good but few knew the outcome of the initiative, although it was widely publicised in the construction press and specialist journals.
- Designers felt more aware of what is required of them and of their responsibilities, but few felt that they had to take any action as a result, despite the fact that advice was given and recommendations made at the conclusion of the visit.
- Only the issue of improvement and prohibition notices would generate improvement.
- Initiatives such as this need to be complemented by increased education and training for designers.

*Source: National Audit Office*

## 14 Changes resulting from the HSE's interventions on large projects

*The HSE's work with duty holders on large projects led to some changes that could lead to improvements in health and safety performance once the project enters the construction phase*

### **The project to build Heathrow Terminal 5**

The site involves large scale earthworks followed by piling operations to construct seven tunnels: two for the airport, two for London Underground Limited, two road tunnels and one storm drain. The project also includes: a terminal building plus satellite buildings; the development of associated road works, such as a new junction off the M25, and car parks.

The HSE's inspectors examined, amongst other things, the project's transport plan - which is used to assess and control the health and safety risks from traffic and transport on the site. The inspectors were not happy with the first version and considered issuing an improvement notice but felt that, on balance, it was better to work with the companies involved to bring about improvements.

The contractor produced an amended version as the result of the HSE's work. The HSE will monitor its implementation.

Duty holders also informed us that the HSE's interventions led to a change in the project's approach to occupational health.

### **A project to construct a sewage treatment works**

An £80 million project to design, construct and commission a new sewage treatment works in Reading, Berkshire. The project team approached the HSE for advice on access and scaffolding arrangements for the four egg shaped towers which, when built, would 'digest' the sewage. As a result of the HSE's advice, the project team reviewed the potential for accidental loading of the access platforms that formed part of the scaffolding and improved the procedures for systems designed to minimise the impact of any fall.

*Source: National Audit Office*

between the initial intervention and construction work starting, it is important that the HSE has formal plans for follow-up visits. At the time of our examination, we identified instances where no formal plans had been established. The HSE has informed us that follow-up plans now exist for all projects. Formal follow-up plans will help the HSE demonstrate to duty holders that their duties do not just relate to paper work but to action on site. Follow-up work would also help the HSE to evaluate the effectiveness of the intervention (in relation to the specific project being examined and the approach adopted by duty holders on other projects) and provide examples of good practice to disseminate more widely.

2.18 The HSE told us that it had required inspectors to develop written intervention plans for these major projects to identify whom to target and when, the issues to address, and the techniques to use. It also encouraged them to adopt a more strategic view of the project management process, using sampling and auditing rather than a detailed examination of working practices. This focus was a significant change in the HSE's approach which exposed some gaps in inspectors' skills. The HSE is providing training to fill this gap.



# Part 3

## Ensuring that sites are safe and healthy

- 3.1 The attitudes of employers and workers can influence health and safety performance. This part of the report examines the HSE's work at sites to improve health and safety. We looked at its approach to site inspections and reviewed the steps that it has taken to improve their impact. And we looked at the HSE's work to address employers' and workers' attitudes to health and safety.
- 3.2 The approach and attitudes of both employers and employees in the construction industry can have a detrimental effect on health and safety performance. For example, contractors will often look to reduce costs so as to maximise profits which can lead to reduced health and safety provision on sites. And workers' own attitudes can act as a barrier to improvement. The HSE has sought, over the past two years, to increase the impact it has on these two groups. It has introduced more intensive inspections based on its priorities and has developed specific strategies for influencing small and medium-sized enterprises and sole traders. Both these approaches have met with early successes. We have identified a number of ways to increase their effectiveness.

### The attitudes of employers and workers on site can influence health and safety performance

- 3.3 Contractors and workers are responsible for health and safety on sites and their attitudes and behaviours can influence health and safety performance. The nature of construction projects - the lack of large, long term contracts and constant change - means that employers are often reluctant to invest in workers and build up costs which would be difficult to sustain when work is scarce. Many construction firms therefore subcontract work and use (notionally) self-employed workers, labour

agencies or casual recruitment to meet their fluctuating needs. As a result, the construction industry has the highest level of self-employment<sup>25</sup> - around 40 per cent of the total workforce - of any sector in the United Kingdom's economy.

- 3.4 The Union of Construction Allied Trades and Technicians has pointed to financial incentives for both contractors and workers to subcontract work. Employers' tax and National Insurance Contributions are lower and some do not pay the costs of sick pay, redundancy, pension schemes and the Construction Industry Training Board levy on the wage bill.<sup>26</sup> While self employed workers pay National Insurance Contributions at a lower rate than employees and are able to reduce the amount of their income subject to tax<sup>27</sup> by taking into account legitimate expenses, they bear the financial risks of sickness, accidents, retirement and unemployment and cannot access non-means-tested benefits, and are responsible for their own training costs. Financial disincentives to the employment of directly employed staff therefore exist. A report commissioned by the Union of Construction Allied Trades and Technicians suggests that the number of false self-employed (individuals whom, by the nature of their work, should be classified as employees) in the industry could be between 300,000 and 400,000.<sup>28</sup>

- 3.5 Some commentators - such as the Union of Construction Allied Trades and Technicians - believe that there is a direct link between employment status and health and safety performance. The HSE considers that using self-employed workers does not necessarily have a detrimental effect on health and safety performance.<sup>29</sup> However, using self-employed workers increases

<sup>25</sup> There is no single definition of employment status in United Kingdom legislation which applies to all types of working relationships. The Health and Safety at Work etc. Act 1974 provides definitions relevant to employment status, which are applied on a case-by-case basis looking at all the circumstances of the case and applying the tests developed by the courts at common law to determine the exact employment status of an individual worker. These circumstances will override any agreement or understanding reached between the worker and his/her employer and can lead to a conclusion on employment status, which differs from the status conferred upon the worker for taxation and National Insurance purposes.

<sup>26</sup> The levy is 0.5 per cent for Pay As You Earn workers and 1.5 per cent for Labour Only Sub-Contractors.

<sup>27</sup> To increase revenue collection, the Inland Revenue introduced the Construction Industry Scheme in August 1999. Subcontractors are paid in one of two ways. Those meeting certain qualification criteria are issued with a Subcontractor's Tax Certificate which means they are paid with no deductions for taxation and National Insurance Contributions. If the qualifying criteria are not met, the subcontractor is issued with a Registration Card and will be paid net of taxation and National Insurance Contributions.

<sup>28</sup> Undermining Construction: the corrosive effects of false self employment; Institute of Employment Rights, November 2001.

<sup>29</sup> Revitalising Health and Safety in Construction September 2002.

fragmentation and casualisation of the supply chain and workforce resulting in a number of indirect effects which impact on health and safety (**Figure 15**). The Strategic Forum for Construction has identified "false self-employment" and casual employment as potentially negative influences on health and safety. The Forum categorises this group of workers as "where there is most concern about health and safety" and where "respect for people issues" are ignored.

3.6 Establishing a direct link between employment status and health and safety is however complex for two reasons.

- **High levels of underreporting of non fatal major accidents.** While all fatalities are reported regardless of employment status, this is not the case for major injuries. The HSE has established that there is a significant degree of underreporting of accidents (see paragraph 1.10). Data therefore is at best an estimate, which undermines any conclusions which can be drawn from further analysis.
- **Accounting for 'confounding' factors.** Any analysis seeking to establish causation between employment status and health and safety performance would have to ignore all other possible influences, such as the general approach to health and safety adopted on the site and each worker's attitude to health and safety.

3.7 While health and safety law requires that everyone must be competent to work safely, workers do not have to receive basic health and safety training before starting work on site. The Construction Industry Training Board estimates that only 22,000 people each year enter construction through formal education and training routes, so it is likely that many do not have formal training. In addition, contractors' desire to minimise costs and the nature of the industry can lead to a lack of funding for training. The Construction Industry Training Board, in its report *The effect of Employment Status on Investment in Training*, published in April 2003 concluded that there is strong evidence that firms are less likely to provide training to labour-only subcontractors.

Workers' own attitudes can act as a barrier to improvement in health and safety performance

3.8 In addition to the industry's characteristics, workers' attitudes to their own health and safety and that of their co-workers can be a barrier to improvement. Construction workers tend to be independently minded and view health and safety as 'mostly common sense' and subordinate health and safety to financial rewards. They can be tolerant of poor conditions, which can result in site managers being less likely to improve conditions. Some prefer to follow their own safety code rather than prescribed rules and regulations. And when accidents do occur they often ascribe this to a lack of judgement or inexperience. The HSE's research has established workers' age and experience as a key factor in determining attitudes to health and safety. Younger workers tend to take more risks, while older workers will exercise more judgement based on their experience. Older workers seem to be more receptive to the HSE's advertising, while younger workers see some of the images employed as patronising.

There is an opportunity to improve targeting of inspections, a key component of the HSE's work

3.9 Site inspections remain a core part of the HSE's work to improve the construction industry's health and safety performance and are a key mechanism through which the HSE engages with contractors and workers. They help the HSE to enforce health and safety law and good practice, provide advice to contractors on improvements that can be made and the implementation of good practice, and prevent dangerous practice from continuing. The HSE inspector is also able to engage directly with the workforce to gather their views on the approach adopted to health and safety on the site. The HSE sets annual targets for the number of inspections to be completed in a year. For 2002-03, Construction Division exceeded its target of 37,000 regulatory contacts, including 16,460 inspection contacts, achieving 45,645 regulatory contacts (including 22,041 inspection contacts). For 2003-04, Construction Division has been set targets of

## 15 Potential indirect effects of self-employment on health and safety performance

*Self-employed status can have a negative impact on health and safety performance*

- Large numbers of short term workers make management and control more difficult.
- It is difficult to organise training, consultation, communication and cooperation.
- It is difficult to build trust and understanding.
- There is less incentive to invest in training.
- People working alongside each other for short periods do not learn each others' strengths and weaknesses and have limited opportunities to improve expertise.

40,900 regulatory contacts, including 17,700 inspection contacts. As a result of these regulatory contacts, the HSE issued 3,567 enforcement notices (improvement and prohibition) and pursued 604 prosecutions in the construction sector during 2002-03, some 36 per cent of the total number of prosecutions pursued by the HSE across all sectors of the economy. Of these, 433 (72 per cent) resulted in a conviction and an average penalty of £5,698, a reduction of 24 per cent on the previous year. The average penalty for all sectors was £6,040, 27 per cent less than 2001-02.

3.10 We found that stakeholders generally support the need for inspection and enforcement at site level. And the duty holders whom we contacted that had been subject to the HSE's large project and government as client interventions were positive about the nature and the usefulness of the contact. However, while some felt that there are too few inspections, others suggested that there were either too many or that they concentrated too much on larger sites and companies and not enough on smaller firms. On inspection quality, some stakeholders commented that there is 'too much stick' and that there is a need for more positive feedback to help raise site standards. Others suggested that some younger inspectors do not have enough experience of the construction

industry. They also said that, on occasions, there is a lack of consistency between inspectors, causing confusion among firms and workers as to the standards they should apply. Such criticism of inspections and enforcement activity are commonplace in any regulatory regime.

3.11 The number of inspectors and the size of the industry means that there is one inspector for every 3,333 construction sites. The HSE, if it used this method alone, would therefore come into direct contact with a very small proportion of the industry. The HSE has recently extended the use of blitzes to increase the impact of inspections, as well as developing its more broadly based intervention strategy of engaging with a wider range of stakeholders.

3.12 In 2002-03, the HSE carried out eight 'blitzes' in the construction industry which concentrated inspection effort by bringing resources together in one place at one time, to focus on one theme with the aims of increasing impact and enabling inspectors to learn from each other to develop consistency. Each blitz focused on a particular health and safety risk derived from the Construction Priority Programme with each region deciding the precise theme, approach and objectives ([Figure 16](#)).

## 16 The HSE's blitz programme for 2002-03

*The blitzes completed in 2002-03 covered a range of topics*

Date	Theme	Region within Construction Division	Number of sites visited (Notices; possible prosecutions)
April 2002	Falls from height	London, East and South East	250 (110;10)
May 2002	Falls from height, workplace transport and welfare	Scotland and the North of England	444 (259;10)
June 2002	Roof work Falls from height Workplace transport Welfare	West Midlands, Wales and South East	383 (150;3)
June 2002	Falls from height and workplace transport	Yorkshire and the East Midlands	126 (56;0)
December 2002	Falls from height	Yorkshire and the East Midlands	131 (45 <sup>1</sup> ;0)
January 2003	Falls from height, welfare, public protection, transport and training	Wales, South West and West Midlands	107 (30;0)
March 2003	Mobile plant, vehicles and lifting operations	London, East and South East	200 (75;0)
March 2003	Designer initiative	Scotland and the North of England	123 (0;0) <sup>2</sup>

### NOTES

- 1 Two sites were closed.
- 2 The designer initiative, unlike the other blitzes' was not enforcement led.

*Source: National Audit Office review of the Health and Safety Executive's 2002-03 blitz programme*

3.13 We found that blitzes enjoyed the support of the overwhelming majority of inspectors and stakeholders. We examined the outcomes from the blitz programme. The HSE's contact with the industry increased and it was able, through the pre blitz publicity, to raise awareness of the topics outlined in *Revitalising Health and Safety* and in the newly created Construction Division amongst more organisations than were visited, widening their influence. Internally, the blitzes have helped to train inspectors and encourage a consistent approach. Advanced warning of the blitzes created an enforcement expectation amongst duty holders, who were more prepared to accept the HSE's actions. Some of the larger companies addressed the issues raised at a national level, ensuring that the message was disseminated to a much wider audience. However, the visits showed up a disparity between standards expected by the HSE and those applied at site level. Inspectors found that some of the sites inspected as part of the blitz programme were often better prepared than those visited as part of the HSE's programme of unannounced site inspections. However, many duty holders who were aware of the subject of the blitz programme took no action because they believed the site was of a suitable standard.

3.14 The 2002-03 blitz programme has demonstrated the potential of such an approach. Blitzes can be used as an effective instrument within a campaign on a particular topic, or to target specific parts of the supply chain. Blitzes can also result in a better use of an inspector's time. We identified a number of ways in which the HSE could build on this success and improve further the effectiveness of future blitzes. The blitz programme's impact could be increased by ensuring the focus is part

of integrated and co-ordinated campaigns within the broader intervention strategy. Such an approach should also involve some or all of:

- follow up interventions with the same stakeholders;
- focused blitzes on similar themes, including enforcement to raise standards;
- publicity campaigns before and after the blitz;
- better engagement with intermediaries in planning and delivery and to disseminate pre and post-blitz information;
- using blitzes to support industry initiatives.

The nature of blitzes provides a very good basis for evaluation purposes. The HSE needs to plan and manage future blitzes so that it can assess their impact on short and long term outcomes more easily.

### Safety and Health Awareness Days are an effective way of reaching workers

3.15 Ninety per cent of construction workers work for companies employing up to seven workers - small and medium sized firms or sole traders. This group is difficult to influence because of the nature and timescale of the projects with which they are usually involved. In addition, small and medium sized enterprises can be wary of direct contact with the HSE because of a perceived threat of enforcement action. The HSE has supplemented its programme of site based inspections with a range of activities targeted at this audience ([Figure 17](#)).

## **17 Improving health and safety amongst small firms and the self-employed**

### *HSE uses a range of tools to promote health and safety in small firms*

Strategy	Description
Working Well Together Campaign - roadshows	Aims to raise awareness and encourage workers to take responsibility for safety on site and promote good practice, through displays, quizzes and information packs.
Safety and Health Awareness Days	Facilitated by HSE but delivered by the industry to make the messages more practical and accessible to smaller firms.
Blitz programme	Concentrated inspections targeted at geographical areas which also tend to inspect more small firms than is usual. 85% of those visited during a blitz on falls from height in June/September were smaller firms.
Media and publicity	Paid advertising using images designed to capture the attention of small firms and workers placed on billboards, tabloid newspapers, petrol pumps and other key locations. Articles in free publications available from builders merchants such as the <i>Absolutely Essential Guide to Health and Safety</i> which uses cartoons and simple bullet point advice.
Engage in partnerships with industry	Joint initiatives to work through the supply chain such as events with the Major Contractors Group to raise awareness of the Construction Skills Certificate Scheme.

*Source: National Audit Office*

3.16 We examined the Safety and Health Awareness Days in detail. The HSE adapted the approach applied in the agricultural sector and developed a programme of Safety and Health Awareness Days for the construction sector, delivered by intermediaries and partners (such as large local and national construction companies) rather than the HSE to encourage attendance. It contributed £120,000 of funding and co-ordinated and evaluated the programme. The programme's aims were to improve knowledge of health and safety risk, promote best practice, and encourage firms to take action on at least one health and safety topic.

3.17 During 2002-03, the HSE facilitated 13 Safety and Health Awareness Days, which attracted almost 2,300 attendees from some 1,000 small firms. Following the event, attendees reported that they had made positive and tangible changes to their approach to health and safety, such as purchasing new safety harnesses, stopping the use of ladders as working platforms (a major cause of falls from height), and contacting scaffolding companies to ensure compliance. The construction industry has welcomed the Safety and Health Awareness Days programme, highlighting that it:

- is a cost effective way of training subcontractors (a major client has since asked whether an event could be run for its subcontractors);
- is a way to extend the pool of competent subcontractors by inviting those currently not on "approved" lists; and
- presents an opportunity to demonstrate commitment to securing improvement.

3.18 We found that the HSE, through the Safety and Health Awareness Day programme was able to reach firms and workers that it would not necessarily contact during site inspections. They are therefore a valuable technique for extending the HSE's influence with a group within the industry which can be hard to target. Construction Division is developing the structure and focus of the 2003-04 Safety and Health Awareness Days programme to cover workers in high risk occupations, such as roofers and scaffolders, and groups that can influence health and safety performance, such as designers. The HSE should also seek to identify other intermediaries with whom to work, such as trade associations and larger companies which subcontract work to small and medium sized enterprises, to enable the programme to cover an increased number of firms and workers.

### The HSE has taken steps to increase its understanding of risks and accidents

3.19 The HSE has analysed data from the past five years to determine the main causes of accidents and the identity of the groups of workers most at risk. Factors analysed include occupation, accident type, age, work process, region and so on. This type of analysis has revealed a number of facts about falls from height, which account for 47 per cent of all deaths in the construction industry, including that older workers are more likely to die from their injuries ([Figure 18](#)).

## **18 Falls from height - results of the HSE's analysis of accident data**

*The HSE's analysis of data on falls from height will help it target its work at those most at risk*

- Carpenters, joiners, and roofers account for 22 per cent of all high falls.
- Roofers account for approximately one quarter of all deaths from high falls and have three times as many fatal accidents as any other occupation.
- A roofer aged between 45 and 54 has a 17 per cent chance of dying from their injuries compared with a 3.6 per cent chance of a roofer aged between 25 and 34.<sup>1</sup>

#### **NOTE**

- 1 This difference is statistically significant.

*Source: National Audit Office analysis of data held by the HSE's consultants*

3.20 The HSE has used its analysis to target workers through site inspections. It has also disseminated the key messages using intermediaries such as trade groups and trade unions. The HSE's work with some parts of the construction industry such as demolition, steel frame and pre-cast concrete erection has also led to process re-engineering, where the resulting investment in training and new technology has led to some improvements in health and safety performance amongst these sectors - for example, no steel erectors have been killed in the last two years. Business benefits such as faster delivery of projects and greater certainty have also been identified.

3.21 Stakeholders would like more information of this kind as they find it more meaningful and helpful in changing their own behaviour and that of others. The HSE intends, from April 2004, to reduce the amount of guidance it provides to all sectors to encourage the industry to take ownership of its risks and to manage them because it is concerned that the industry is becoming too dependent on the HSE telling it what to do. While the industry needs to take more responsibility for health and safety, the disparity found during blitzes between the HSE's expectations for adequate standards and the industry's understanding suggests that the HSE should reduce its guidance in a planned and selective way, concentrating on areas of the highest risk identified through analysis of the causes of accidents and linked to the Priority Programme topics and drawing on issues identified through the blitz programme and other initiatives.

The HSE has placed an increasing emphasis on improving the construction industry's occupational health

3.22 The HSE has, over the last few years, developed its approach to improving the construction industry's occupational health record. In February 2001, the HSE's Health Directorate, working closely with Construction Division, commissioned a study to define a specification for a feasibility study into the establishment of occupational support for the United Kingdom's construction industry. The subsequent feasibility study provided a model for a national occupational health scheme and recommended that a pilot scheme - Constructing Better Health<sup>30</sup> - should proceed. The pilot scheme's aims are to:

- offer employees and employers ways of reducing exposure to key health and safety risks;
- provide employers access to free on site risk assessments;
- provide a source of free advice and guidance for employers and workers; and
- act as a gateway for specialist support.

An Action Forum of key players in the industry, facilitated by the HSE, is taking the lead in raising funds for the scheme. In January 2004, the HSE appointed the preferred bidder and fund holder for the pilot.

3.23 The Action Forum's 2003-04 strategy for construction includes specific plans to tackle asbestos, musculoskeletal disorders, noise and hand arm vibration syndrome, and welfare and the control of dermatitis.

# Appendix 1

## Methodology

### Review of statistics and data

We reviewed the statistics compiled and the analysis commissioned and completed by the HSE to ascertain:

- the reasons why particular policies, priorities, objectives and methods had been developed and adopted;
- the extent to which they were based on quantitative and qualitative research and analysis and to which statistical analysis and other research was used to assess the effectiveness and impact of the HSE's work.

We also completed some additional analysis of the data; interviewed staff from the HSE's statistical unit, Construction Division, and its consultants who have carried out statistical analysis for Construction Division.

### Review of the key elements of the HSE's approach

We interviewed representatives from the HSE's Construction Division to discuss strategies, impacts and barriers to change, analysed reports and other documentation produced on these areas. We completed detailed reviews of three elements of the HSE's intervention strategy for the construction industry: **large projects; the government as client; and designers**.

#### Large projects

We reviewed ten of the large projects on which the HSE has intervened in 2002-03. We interviewed the inspectors responsible and the duty holders the HSE had contacted as part of the project to assess the impact of the interventions.

Name of project	Description of project
Nuffield Orthopaedic Hospital	Replacement of an ageing collection of buildings on an existing site
Arndale Centre	Redevelopment and extension of the northern half of the Arndale shopping centre
White City Development	The development of a 16 line depot for London Underground and the creation of a retail complex
The Cambridge Hotel	A new hotel comprising 120 bedrooms and conference facilities
Mayfair Development	The construction of a block of apartments
Reading TW Egg 'Digesters'	Design construction and commissioning of a new sewage treatment works in Reading, Berkshire
Heathrow Terminal Five	The creation of a new terminal for Heathrow airport involving the construction of seven tunnels and a new terminal building
Land Rover	Design and construction of a large building for spraying cars
Spinningfields	An urban development scheme comprising office, retail, community and residential space across 12 large buildings
Eggborough Power Station	The implementation of a flue gas desulphurisation project

## Survey of government as client

We surveyed the nine government departments and agencies that formed the Office of Government Commerce's Property and Construction Panel, listed in the table below. We asked for their views on the HSE and the steps they were taking to improve health and safety on the projects for which they were responsible.

### Defence Estates

- Department for Culture, Media and Sport
- Department for Work and Pensions
- Department of Trade and Industry
- Foreign and Commonwealth Office
- HM Prison Service
- Highways Agency
- NHS Estates
- Office of Government Commerce

## Designers

We reviewed the outcome of HSE's intervention with designers in Scotland and Northern Ireland.

## On site inspections

We reviewed the HSE's approach to **site based inspections**. In particular, we focused on the 2002-03 blitz programme, including a detailed analysis of two of the blitzes (on mobile plant, vehicle and lifting operations). To complete this work, we employed consultants to interview the HSE staff, stakeholders who had been present when the blitz was completed, and reviewed relevant documentation.

## Assessment of the HSE's approach to evaluation

We employed consultants to review the HSE's approach to evaluating the outcomes and the impacts from its strategies and programmes for improving the health and safety record of the construction industry. The review included an assessment of the barriers to improvement of its approach and of the use made of completed evaluations.

## Consultation with key stakeholders in the industry

We consulted with a range of stakeholders with an interest in improving the construction industry's health and safety record. The stakeholders - listed below - included construction industry bodies, trade associations, workers' representative bodies, government departments and agencies, and other organisations.

### Amicus

- Association of British Insurers
- Association of Planning Supervisors
- Centre of Corporate Accountability
- Civil Engineering Contractors Association
- Confederation of Construction Clients
- Construction Confederation
- Construction Industry Council
- Construction Industry Training Board
- Construction Products Association
- Federation of Master Builders
- GMB - Britain's General Union
- Heating and Ventilation Contractors Association
- Institution of Civil Engineers
- Institute of Structural Engineers
- Institute of Occupational Health and Safety
- Major Contractors Group
- Movement for Innovation
- National Federation of Builders
- National Specialist Contractors Council
- Rethinking Construction
- Royal Institute of British Architects
- Specialist Engineering Contractors Group
- Strategic Forum
- Transport and General Workers Union
- Trades Union Congress
- Union of Construction, Allied Trades and Technicians

## International comparisons

We compared the United Kingdom's health and safety record with that of other countries, taking into account measurement issues that qualified any comparisons we could make. We interviewed Bill Maloney, Professor of Construction at the University of Kentucky, USA and six companies - listed below - with experience of the health and safety regime in other countries in order to make comparisons between different health and safety regimes.

Bovis Lend Lease

Costain

HGB Construction

Mace

Skanska

Vinci PLC

The following points arose from our discussions.

- The HSE is more proactive than most other enforcement agencies in other countries.
- The United Kingdom lags behind other countries in terms of occupational health. For instance, many European Countries screen workers on an annual (often statutory) basis, which is funded by either employers (Spain), industry (Germany), or government (Russia). In Holland, sick workers are rehabilitated, and in Germany workers are given industry funded paid sick leave.
- Alternative construction techniques which may have a positive impact on health and safety are relatively underutilised in the United Kingdom. For example, the use of pre-fabricated material.
- The prevalent culture of the United Kingdom's construction industry is complacency and a tendency to view the HSE, not the industry, as responsible for workers' health and safety. Some other countries, such as Denmark and the United States of America, have more of a culture of self-regulation and joint responsibility.

# Appendix 2

## Analysis of initiatives undertaken by the Health and Safety Construction Division (2002-03)

Initiative/ Activity	Objective	Target audience	Methods used	Early indications of impact
Publicity Campaigns	Raise awareness. Improve knowledge.	Concentration on smaller sites, sole traders (builders) and small and medium sized firms, although there is some promotion to larger sites.	Methodology has included: i Free leaflets; ii The Absolutely Essential Toolkit; <sup>31</sup> iii Working Well Together Bus; iv Videos; v Poster Campaign; <sup>32</sup> vi Press Coverage. <sup>33</sup>	There appears to be a problem of 'leakage' of messages. <sup>34</sup> For example, 90% of those visiting the Working Well Together Bus, said that the visits would prompt them to change compared to the best-known advertising initiative, the 'Ian Whittingham' campaign, where less than 50% of the target audience would be prompted to change. In the case of the 'White Van Ambulance' campaign, only 26% recognised any impetus to change.
Safety and Health Awareness Days (SHAD)	Raise awareness. Improve knowledge. Gain commitment to take action.	Small businesses with less than 10 employees and sole traders.	Partnership events providing help for the industry from the industry.	The follow-up evaluation found that the average number of attendees to SHADs who have implemented health and safety changes is 88 per cent of those surveyed. <sup>35</sup>  All delegates surveyed (100 per cent) said they would recommend the events to others. <sup>36</sup>
Blitzes <sup>37</sup>	Raise awareness of Health and Safety within the construction industry.  Reduce deaths, injuries and ill health on badly run sites.	Small and large construction sites across the regions.  Site selection is guided by the theme of the Blitz and inspectors' local knowledge.	Site inspections. <sup>38</sup>	Difficult to estimate given the short period between the blitz programme and evaluation.  Blitzes have: raised awareness of key Health and Safety topics; successfully provided training to inspectors; and developed consistency in enforcement.

<sup>31</sup> For the smaller construction contractor, a spiral bound pocket book with 'humorous' cartoon imagery and supporting text.

<sup>32</sup> Such campaigns include: Height Safe Campaign; Working Well Together (WWT) Initiative; and the Ian Whittingham Campaign.

<sup>33</sup> Press coverage includes: Trade press (Construction News, Professional Builder, and Contract Journal etc.) and 'red' tops.

<sup>34</sup> Source: HSE.

<sup>35</sup> This is measured over the first four evaluations. For those who had not taken action, it appears that the inappropriateness of the delegate may have been a factor.

<sup>36</sup> This result does not address whether the follow-up being by HSE might have biased the responses in any way.

<sup>37</sup> 'Blitz' is the HSE term for any activity it undertakes where its resources are brought together in one place, at one time, and which focuses on one theme with the intention of having a greater impact than carrying out the work in a less structured fashion.

<sup>38</sup> For the period 2002-03, inspections included: Falls from height & welfare (April 2002); Falls from height, workplace transport & welfare (May 2002); Roof Work (June 2002); Falls from height & workplace transport (June 2002); Falls from height (December 2002); Revitalising themes (January 2003); Mobile Plant, Vehicles and Lifting (March 2003); and Designer Initiative (March 2003).

Initiative/ Activity	Objective	Target audience	Methods used	Early indications of impact
<b>Large Projects</b>	To secure more effective and efficient interventions with clients, designers, and planning supervisors. <sup>39</sup>	Clients, designers and planning supervisors of larger projects.	The plan was for inspectors to select larger projects in their areas; prepare a strategic intervention programme for the project and carry out visits to CDM duty holders. Where action is taken against CDM duty holders to improve the level of compliance, subsequent visits to the project should check to ensure that these result in improvements in risk control on site. Inspectors should then apply strategy to all larger projects as they arise.	Some duty holders contacted by the National Audit Office confirmed that they had either made changes to the project in question, or disseminated lessons more widely within their company, or changed working practices. HSE inspectors also found the intervention useful in developing their skills in talking to duty holders whom they do not normally contact. Additional training needs have been identified and action is being taken to meet them.
<b>Government as Client</b>	To ensure Government Bodies responsible for procuring construction work operate as best practice clients and have management arrangements in line with the procurement guidance <sup>40</sup> issued by the Office of Government Commerce (OGC) by March 2004.	Government Clients (Departments, Agencies, and Non-Departmental Public Bodies).	Methodology: i Target Government Clients and allocate them to a lead construction team from each of the FCD Regions (04/02); ii Discuss with Chief Executive arrangements for implementing OGC Guidance. This should result in a Department action plan (09/02); iii Visit Department to assess progress with action plan and identify suitable projects for visits in year 2003-2004 (03/03); iv Prepare 'Major Project Inspection Program' for projects identified by Lead Teams (03/03); v Carry out series of project visits to assess effectiveness of Government Clients procedures (03/04); vi Carry out follow up visit to Government Client giving feedback on their performance (09/04).	The sector has commissioned a research project for 2002-03 and beyond, specifically aimed at evaluating the success of the new intervention strategy. Departments contacted by HSE have reported to the National Audit Office increased awareness and some have taken specific action to improve their processes. This is an initiative which could be extended usefully to other public bodies, particularly those which influence the construction procurement of others.

<sup>39</sup> To be achieved by using larger projects as a vehicle for inspectors to assess their management arrangements for controlling risk, and to make more effective use of site inspection time spent on larger projects by planning interventions to coincide with the best opportunities for achieving risk reduction.

<sup>40</sup> The OGC have published Construction Procurement Guidance, 'Achieving Excellence through Health and Safety' for Government Clients to follow. The guide requires Departments to introduce a corporate commitment to Health and Safety in across every level throughout their organisation. Senior staff within departments should have access to current information on the Health and Safety performance of all their projects, not just during construction, but throughout the lifecycle of procurement, construction, use, maintenance and ultimately, disposal. They should be aware of how they perform, not only against other departments, but also against the best in the private sector.

Initiative/ Activity	Objective	Target audience	Methods used	Early indications of impact
Work with intermediaries	None specific.  Raise awareness of Health and Safety in the construction industry.		Working with: i OGC; <sup>41</sup> ii Strategic Forum for Construction; <sup>42</sup> iii Government Construction Client Panel; and iv Umbrella Bodies <sup>43</sup> (Presented Action Plans at the February 2001 Construction Safety Summit).	Stakeholders confirmed that HSE now had a higher profile.
Discussion Document	Identify new and innovative ways to improve the construction industry's Health and Safety record.	The construction industry.	In total 10,000 copies of the Discussion Document were printed and distributed. In addition to this, approximately 8,000 copies were downloaded from the HSE website. HSE also distributed nearly 100,000 copies of a leaflet (aimed at SMEs) promoting the Discussion Document.  Approximately 300 responses were received from throughout the construction industry.	The Discussion Document has identified a range of areas which require improvement and have been fed into development of HSE strategies.

<sup>41</sup> The Achieving Excellence Initiative was launched in March 1999, to improve the performance of central government departments, executive agencies and non-departmental public bodies (NDPBs) as clients of the construction industry. To take the initiative forward, a future strategy was launched in February 2003 by the Chief Secretary to the Treasury, with challenging targets through to April 2005. See *Government as Client*.

<sup>42</sup> The Strategic Forum for Construction is an industry-led body.

<sup>43</sup> These include: Construction Confederation (CC), and Major Contractors Group (MCG); Confederation of Construction Clients (CCC); Construction Industry Council (CIC); Constructors' Liaison Group (CLG); Construction Products Association (CPA); Construction Industry Training Board (CITB); Trades Union Congress (TUC); Engineering Construction Industry Association (ECIA); Construction Industry Board (CIB); and the Federation of Master Builders (FMB).

# Appendix 3

**Health and Safety Executive - Enforcing Health and Safety in the Workplace, Committee of Public Accounts' report (Thirty Fifth Report 1993-94)**

Recommendation	Action <sup>44</sup>
The Executive should monitor accident trends and respond promptly to significant changes.	Accident trends are monitored and responded to, for example the selection of Priority Programmes and their development and delivery.
The Executive should consider introducing a telephone reporting system. The Executive should review the impact of this and other improvement measures, and re-examine the position if these measures do not lead to an increase in reported accidents.	In 2001 an Incident Contact Centre (ICC) was established to receive reports of accidents at work. The centre allows reports to be notified by either fax, post, e-mail, the web or by telephone and, from a position where virtually all reports were received by post, over 50% of reports are now received by telephone or via the internet. The centre's introduction was supported by publicity in the national press, reinforced with a leaflet campaign and a targeted mailshot to SMEs in selected industry sectors. Indications are that the overall trend in reporting levels has been unaffected by the introduction of the ICC but that improvements in reporting have been achieved amongst past poor performers (e.g. agriculture and the self-employed) and in particular categories of reports (e.g. major injuries).
The Executive should review what they can do to focus more attention on construction sites most likely to be at risk, through well-targeted inspections, backed by further publicity about precautionary measures and prosecutions.	HSE and HSC have made construction the subject of a Priority Programme. This is supported by a range of projects that, inter alia, target small firms and high risk trades a) on site through blitzes; b) through engaging with national bodies to develop industry standards; and c) through guidance, publicity and promotional work including 'Roadshows' for workers and Safety and Health Awareness Days for SMEs. HSE has increased the share of resources committed to construction. A public register of prosecutions is now available on the HSE website.
The Executive should urgently consider obtaining up to date reliable information about accident rates at non-notifiable sites and re-examine reporting requirements.	Improved intelligence has been obtained through research and more detailed analysis of available accident data. Reporting requirements are the same for all sites and shortfalls in data from small sites and the informal economy are addressed through the Labour Force Survey data.
The Executive should complete the examination of outstanding 1989 safety reports for firms operating major hazard sites such as oil refineries and chemical plants. The Executive should monitor their workload of reports and ensure future reports are dealt with more promptly.	In the short term, assessment of outstanding safety reports was made a priority. Longer term, there is now a different regulatory regime in place with a dedicated directorate focussed on these sites. Experience gained from the earlier regime was used to influence negotiations at EU level on the new regime and in developing management systems to deliver it.
The Executive should monitor the implementation of their new computer system, ensuring it improves completeness and accuracy and allows them to effectively use inspection resources.	The computer system (FOCUS) came fully into operation in 1996 and appropriate procedures were implemented to ensure data quality. This system has been an important tool in targeting FOD's preventive inspection activity and administrative staff have been used to check the existence of premises, prior to inspectors visiting. A new computer system for all HSE's operational inspectorates is currently under development for introduction in 2004-05.
The Executive should give a high priority to reducing overhead costs to release resources that can be directed to inspection work.	HSE has a policy of bearing down on overhead costs. Year-on-year it has kept its staff payroll costs on central overheads below 8% of total staff payroll costs - a target it set itself in the mid 1990's and which compares favourably with other similar organisations. In 2002 it completed a wide-ranging review of corporate support services which led to the adoption of a three year programme aimed at reducing back office costs across the organisation. HSE is also responding positively to the cross-Whitehall Efficiency Review led by Sir Peter Gershon. As a cross-Whitehall initiative the Efficiency Review will provide further opportunities to reduce costs through collaboration which would not have been available to HSE alone.

Recommendation	Action
The Executive should ensure they are soon in a position to take decisions on whether they might organise their work more efficiently.	The workload formula was scrutinised in 2001-02 to ensure that it was still relevant. External consultants examined the methods to allocate staff used by other, similar agencies elsewhere in the world. There was little 'best practice' to take account of and a simpler and more transparent method of allocating staff to divisions and to sectors was developed. The revised formula has now been used to inform the allocation of staff since 2002-03.
The Executive should monitor the effectiveness of the measures they are undertaking to address undesirable variations in the rate of prosecutions between offices.	The HSC Enforcement Policy Statement (EPS) requires HSE to take enforcement action that is proportionate to the risk to health and safety, and lays down when the Commission considers prosecution will normally be in the public interest. To put the policy into practice the HSE has developed quality assurance procedures to guide Inspectors in taking enforcement decisions, including prosecution. HSE has audited management arrangements for checking that these procedures are being followed.
The Executive should develop their targeting of how many inspections divisions are expected to carry out, into a monitoring system enabling them to identify how to increase inspectorate efficiency.	FOCUS has been extensively used to monitor progress against FOD's operating plan, including the number of inspections to be undertaken by divisions. It is also being used as part of on-going work to improve operational productivity.

# Appendix 4

## Lessons for government clients

Government clients should set an example to all clients by:

- embedding the Achieving Excellence in Construction principles in their construction procurement projects, including those of their agencies and NDPBs;
- adopting procurement methods promoted by the Office of Government Commerce's Achieving Excellence in Construction initiative, which maximise the opportunity for integrating the supply chain, as illustrated in the Comptroller and Auditor General's report *Modernising Construction* and the Strategic Forum's *Integration Toolkit*;<sup>45</sup>
- following the advice on how to be a 'best practice' public sector client in Office of Government Commerce's "*Achieving Excellence in Procurement Guide No. 10 - Health and Safety (OGC AE 10)*";<sup>46</sup>
- improving selection processes to make competence in health and safety risk management a key consideration in letting contracts and using the Office of Government Commerce Best Practice Guide on Value for Money Evaluation in Complex Procurement;
- using the Office of Government Commerce *A manager's Checklist for Construction Procurement* and Gateway Review process or similar to ensure projects move forward when key considerations, such as a design risk review, have been satisfied so that hazards are 'designed out' at source;
- using whole life cost, not price, to focus designers' attention on the issues surrounding use, maintenance, modification and demolition of the structure as well as its initial construction;
- monitoring their construction projects' performance against key project indicators including health and safety performance, as set out in the Office of Government Commerce Information Note 03/2004.
- developing key performance indicators to track performance on the contract, benchmark with similar projects and to drive a process of continuous improvement, for example, using the Health and Safety Toolkit in Rethinking Construction's '*Respect for People Toolbox*';<sup>47</sup>
- building up in-house capability so that clients are more aware of their health and safety responsibilities;
- considering whether payment methods such as narrowly focused bonuses for early completion could impact negatively on health and safety performance;
- including a competence requirement in contracts with suppliers which covers all workers regardless of employment status (See Office of Government Commerce Information Note 5/2003, *Assessing Competence in Construction*);<sup>48</sup> and ensuring that contractors are members of one of the various considerate contractors schemes; and
- avoiding late changes to output specification that might impact negatively on health and safety.

<sup>45</sup> <http://www.strategicforum.org.uk/sfctoolkit2/home/home.html>.

<sup>46</sup> [http://www.ogc.gov.uk/sdtoolkit/reference/achieving/ae\\_h&s.pdf](http://www.ogc.gov.uk/sdtoolkit/reference/achieving/ae_h&s.pdf) (Currently being updated).

<sup>47</sup> Rethinking Construction is now a part of Constructing Excellence. For the toolkit, see

<http://www.constructingexcellence.org.uk/resourcecentre/peoplezone/details/toolkit.jsp?toolkitID=109>.

<sup>48</sup> OGC Information Note 5/2003 [http://www.ogc.gov.uk/embedded\\_object.asp?docid=1001421](http://www.ogc.gov.uk/embedded_object.asp?docid=1001421).