

Construction (Design And Management) Regulations 2006

Regulatory Impact Assessment (Partial)

Purpose And Intended Effect

Issue

1. The Construction (Design and Management) (CDM) Regulations 1994 address the health and safety requirements at temporary and mobile construction projects including the way work is planned, organised and managed. The Regulations implement the requirements of Council Directive 92/57/EEC. Following their implementation in 1995, concerns have been raised that their undue complexity, coupled with the bureaucratic approach adopted by many dutyholders, obscured the underlying objectives. These views were supported by an industry wide consultation in September 2002 and have resulted in the decision to revise the current Regulations.

Objectives

2. The revised Regulations aim to reduce construction accidents and ill health by:
 - being clearer in order to make it easier for duty holders to know what is expected of them;
 - being flexible and accommodating the wide range of contractual arrangements to be found in the construction industry;
 - emphasising the need to plan and manage work rather than the bureaucracy associated with it;
 - emphasising the communication and co-ordination advantages of duty holders working in integrated teams; and
 - simplifying the way dutyholders assess competence.

Risk assessment

3. Construction work is inherently hazardous and the risks associated with these hazards are difficult to manage due to the constantly changing nature of the working environment. The following tables 1 to 3 show accident statistics that illustrate the degree of risk faced by all those who come into contact with construction activity:

Table 1: Number of fatal injuries to workers and members of the public 1994/95 to 2002/03p¹

	96/97	97/98	98/99	99/00	00/01	01/02	02/03p
Employees	66	58	47	61	73	60	57
Self-employed	24	22	18	20	32	20	14
Members of the public	3	6	3	6	8	5	5
Total	93	86	68	87	113	85	76

Table 2: Number of major injuries to workers and non-fatal injuries to members of the public 1994/95 to 2002/03p²

	96/97	97/98	98/99	99/00	00/01	01/02	02/03p
Employees	3227	3860	4289	4386	4303	4055	4098
Self-employed	827	466	367	363	405	540	682
Members of the public	405	339	378	403	316	381	259

Table 3: Number of over 3-day injuries to workers 1994/95 to 2002/03p

	96/97	97/98	98/99	99/00	00/01	01/02	02/03p
Employees	8637	9756	9195	10159	9367	9100	8657
Self-employed	1029	509	381	345	429	595	608

Tables 4 to 6 show the proportion of accidents, of various degrees, broken down by kind of accident to workers and employees. These tables give an indication of the main reasons for accidents in the workplace.

Table 4: Percentage of fatal injuries to workers by kind of accident 1996/97 to 2002/03p

	96/97	97/98	98/99	99/00	00/01	01/02	02/03p
Falls from a height ³	56%	58%	60%	52%	44%	46%	46%
Struck by moving vehicle	11%	6%	12%	6%	16%	14%	7%
Struck by moving/falling object	12%	15%	12%	21%	10%	16%	15%
Trapped by something collapsing or overturning	7%	5%	5%	2%	17%	5%	7%
Other	14%	16%	11%	19%	12%	19%	24%

Table 5: Percentage of major injuries to employees by kind of accident 1996/97 to 2002/03p

	96/97	97/98	98/99	99/00	00/01	01/02	02/03p
Falls from a height	35%	37%	37%	36%	37%	30%	30%
Slips, trips or falls on the same level	19%	19%	20%	21%	21%	26%	26%
Struck by moving	3%	2%	3%	2%	2%	2%	2%

¹ Reported to all enforcing authorities. Figures for 2002/03 are provisional.

² Non-fatal injury statistics before 1996/97 cannot be compared directly with earlier years because the system of reporting injuries changed in 1996 (RIDDOR 95).

³ Falls from a height includes falls from up to and including 2 metres, over 2 metres and height not known.

vehicle							
Struck by moving/falling object	21%	20%	18%	18%	18%	18%	17%
Injured while handling, lifting or carrying	8%	9%	9%	10%	8%	10%	11%
Other	14%	13%	13%	13%	14%	14%	14%

Table 6: Percentage of over-3-day injuries to employees by kind of accident 1996/97 to 2002/03p

	96/97	97/98	98/99	99/00	00/01	01/02	02/03p
Falls from a height	12%	12%	14%	14%	14%	11%	9%
Slips, trips or falls on the same level	17%	17%	17%	18%	19%	22%	23%
Struck by moving vehicle	1%	1%	1%	2%	1%	1%	1%
Struck by moving/falling object	19%	18%	18%	19%	18%	16%	15%
Injured while handling, lifting or carrying	36%	36%	35%	34%	33%	35%	36%
Other	15%	16%	15%	13%	14%	15%	16%

Total Cost Of Injuries In The Construction Sector

4. The cost of RIDDOR reportable injuries has been estimated by multiplying the number of injuries by the appropriate unit cost. The average number of injuries for each category reported between 1996/97 and 2002/03 has been used to estimate the average annual cost of each type of injury over the appraisal period. The number of non-fatal injuries reported for workers under RIDDOR has been adjusted for under reporting using a reporting rate of 46%, estimated using the Labour Force Survey (LFS).
5. Non-fatal injuries to members of the public are not separated into the categories of major and over three day, so a range has been estimated. The upper bound assumes that all injuries to members of the public are major injuries and the lower bound assumes that all injuries to members of the public are over three day injuries. It has also been assumed that the reporting rate for injuries to members of the public is 100%.
6. The present value cost of reportable injuries in the construction industry is £5,399 to £5,500 million over the appraisal period.
7. Most minor (under three day) injuries and non-injury accidents are not reportable under RIDDOR, but they impose costs upon society and the proposed Regulations will have an impact on their frequency. To estimate the cost of these health and safety failures, the number of each type has been multiplied by the appropriate unit cost.
8. To estimate the number of minor injuries, the number of all injuries estimated using the LFS has been reduced by: (1) 6% to account for 'don't know', 'still off' and 'never returned', and (2) the number of injuries leading to 4 or more days off work (equivalent to

the number of over three day and major injuries). Note that LFS data is only available from 1997/98 to 2001/02.

9. The cost of minor injuries to the construction sector is £167 million over the appraisal period.
10. The number of non-injury accidents has been estimated using an injury/non-injury accident ratio estimated in a study by HSE's Accident Prevention Advisory Unit (APAU, 1993). APAU found that the ratio of injury to non-injury accidents in the construction sector was 1:64. Multiplying the total number of injuries (corrected for under-reporting) by the injury/non-injury ratio and the unit cost of non-injury accidents indicates that the annual cost of non-injury accidents is £9239 million over the appraisal period.
11. The present value cost of injuries including minor injuries and non-injury accidents in the construction sector is £14,804 to £14,905 million over the appraisal period.
12. The UK construction industry has no entry threshold, is highly fragmented, itinerant and casualised. The industry employs 6% of the working population, but accounts for 25% of fatal injuries and 16% of the major accidents. Its output amounts to £90 billion or 10% of GDP⁴.

Options

Option 1: Do Nothing

13. The TMCS Directive must be implemented in UK domestic legislation, and this was done through the CDM 1994 Regulations and the Construction (Health, Safety and Welfare) Regulations 1996 (CHSWR) – supported respectively by ACoP/guidance and guidance only. Following their introduction, a number of early problems with the understanding and application of the CDM Regulations emerged and it was clear that the Regulations were not being as effective as intended, and that these issues needed to be resolved.
14. The number of accidents that occur in the construction industry remains disproportionately high, as do the subsequent costs, considering the proportion of work force employed, as outlined in the Risk Assessment section.
15. The Do Nothing Option is therefore not a viable option in terms of health and safety, neither is it economically viable.

Option 2: Revised Set Of Regulations Supported By A New Approved Code of Practice (ACoP) or Guidance

16. In considering how to address industry concerns over the CDM Regulations, and encourage productive compliance, HSE has considered (and subsequently tried) several alternative and non-regulatory means of remedying the situation. The first of these was

early informal guidance from the Chief Inspector of Construction (the Natrass Letter). Despite this intervention, problems remained and this led, as a next step, to an early review of the Regulations followed by consultation on, and revision of, the CDM ACoP in 2001. Although the revised ACoP was favourably received by the industry, it did not have the desired level of impact.

17. To encourage discussion of possible ways of radically improving health and safety a Discussion Document (DD) was published in September 2002. In part this asked industry for its views about the Regulations and their future. The conclusions drawn from the industry's responses on these issues were that:
 - earlier initiatives had not achieved the desired change in the industry's approach;
 - the CDM principles were generally supported, but the paperwork burden needed to be reduced as a lot of *compliance* effort was being wasted; and
 - there was a desire for a set of clear, simple, unambiguous and practical legislation (and supporting guidance) for the industry, which should remain focused on the underlying objective of saving life, avoiding injuries and maintaining health.
18. CONIAC concluded that the best way to deliver this change would be to revise the Regulations and supporting ACoP. This reflects the experience gained from the previous remedial actions, draws on the successful aspects of those measures and is regarded by industry as the only option that will satisfactorily address the issues raised, while retaining the generally accepted CDM principles, implementing the provisions of the TMCS Directive and incorporating Better Regulation principles.

Option 3: Retain the CDM 1994 Regulations and produce a revised Approved Code of Practice (ACoP) to further clarify the Regulations.

19. As stated above, the CDM Regulations 1994 have proved to be less effective than anticipated. The CDM ACoP was revised in 2001 and, while addressing the problems that had arisen, did not fundamentally change the industry's perception that these were Regulations about '*paperwork*' rather than good project management. As the key messages (active management, co-operation, communication within the design and construction teams and minimising bureaucracy) have not changed, a second revised ACoP alone is unlikely to be substantially more effective. Consequently, more fundamental changes are thought necessary, and so this option is unlikely to achieve the required effects and is not recommended.
20. The costs and benefits of this option are intertwined with those for the CDM Regulations in 1994. The costs of the revision would be similar to the costs of option 2, as a similar effect would need to be achieved in terms of a cultural change within the industry. The

⁴ Construction Statistics Annual 2004 published by the Department for Trade and Industry.

benefits of the CDM Regulations have already, in the most part, been realised, especially with the revision of the ACoP in 2001. Therefore we would estimate this option would only produce benefits of around 5 to 10 % of the benefit of Option 2. A summary of the costs and benefits of Option 3, in contrast to Option 2, can be seen in the table below:

	Present Value Over Appraisal Period, £Millions	Annualised Value £Millions	Percentage of Option 2
Benefit of Option 3	979 to 2,170	114 to 252	5% to 10%
Cost of Option 3	9,498 to 11,031	1,103 to 1,282	100%

This table shows that the costs of option 3 are estimated to far outweigh the small benefits over the appraisal period.

21. The costs and benefits of a revised ACoP could not be quantified separately from the Regulations when the revision occurred in 2001 and that is still the case. For that reason Option 3 does not play a part in the remainder of the RIA.

Information Sources and Background Assumptions

22. Information used to estimate the costs and benefits of the CDM Regulations has been obtained from industry sources, representative organisations, the Department for Trade and Industry, '*Improving health and safety in construction*⁵, Experian/CITB research, the Department for Transport's Highways Economic Note no. 1 2002⁶, '*The costs to Britain of workplace accidents and work-related ill health*⁷, and other sources within HSE.
23. Costs and non-health and safety benefits have been discounted using the Treasury recommended rate of 3.5%. Health and safety benefits have been uprated by 2% to account for increases in GDP and discounted at 3.5% producing an effective discount rate of 1.5%.
24. Costs and benefits have been calculated over a ten-year appraisal period from 2006 to 2015 and are given in 2003/04 prices.

⁵ Bomel Limited, 2004, 'Improving health and safety in construction, Phase 2-Depth and breadth, Volume 6'. <http://www.hse.gov.uk/research/rrhtm/rr235.htm>

⁶ http://www.dft.gov.uk/stellent/groups/dft_rdsafety/documents/page/dft_rdsafety_026183.hcsp

⁷ HSE 1999, 'The costs to Britain of workplace accidents and work-related ill health', ISBN 0-7176-1709-2.

25. Health and safety benefits have been estimated using unit values for the cost to society of fatal injuries, major injuries, over three day injuries, minor injuries and non-injury accidents⁸.
26. Some costs are opportunity costs reflected by lost output as a result of performing new duties. It has been assumed that the value of lost output is equal to the time spent carrying out the new duty multiplied by the average wage of the worker (adding 30% for non-wage labour costs including superannuation and employers' National Insurance contributions). Wage rates have been taken from the New Earnings Survey 2003. The wage rates used are £15.60⁹ for contractors, £18.60¹⁰ for clients, and £16.90¹¹ for designers.
27. Costs and benefits have been estimated using current compliance with duties set out in the proposed Regulations as the baseline and using the expected level of compliance estimated by HSE inspectors and staff. In the uncertainties section, costs and benefits are estimated assuming that there will be 100% compliance with the proposed Regulations.
28. There are three main thresholds for projects under CDM 1994: under 5 worker projects, other non-notifiable projects and notifiable projects. Under the proposed Regulations the under 5 worker category will be removed and these projects will be subject to the general requirements of the proposed Regulations. The definition of notifiable projects will remain unchanged and will be the single threshold for appointments and plans required under the proposed Regulations. For the purpose of estimation, costs have been estimated separately for non-notifiable under 5 worker projects, non-notifiable over 4 worker projects and notifiable projects.

Equity And Fairness

29. The ethnic and gender mix of the construction industry is generally accepted as being dominated by white males, with women and ethnic minorities being under-represented. Migrants and other socially and economically disadvantaged workers are likely to work in construction. Vulnerable groups have been specifically identified in HSE's Construction Priority Programme, but HSE does not differentiate by migrant status and considers it counter productive to do so.

⁸ Fatal injuries £1,336,810 major injuries £35,475, over three day injuries £5,046, minor injuries £307, and non-injury accidents £172. Unit costs are in 2003/04 prices.

⁹ Construction Managers.

¹⁰ Average of manager/ senior official £19.20 and production/ maintenance manager £18.27.

¹¹ Average of architects £18.14 and design and development engineers £15.63.

30. The proposed Regulations will apply equally to all ethnic groups, vulnerable groups, and to men and women alike. The proposed Regulations are unlikely to have a greater impact on any particular age group, on people with disabilities or on any particular area/region. Consequently, there is no evidence to suggest that the proposed Regulations will lead to inequity or unfairness when they are complied with.

Atypical workers

31. Many workers in the construction industry are self-employed and there are many who obtain their work through employment agencies. The available evidence (RIDDOR and LFS) indicates that injury rates to the self-employed are lower than those to employed workers. This conclusion appears to many to be counter intuitive, but even the IER report commissioned by UCATT says “it cannot be stated that self-employed construction workers are more at risk to fatal or major injuries.”
32. Many people incorrectly think that health and safety law does not cover self-employed workers. People may be self-employed, but if they work under the control of others, they are usually treated as employees under health and safety law. The CDM Regulations are deliberately drafted to address this issue and place responsibilities on everyone controlling workers to ensure the health and safety of those workers irrespective of their employment status. The proposed Regulations will not change this.

Benefits

Health And Safety Benefits

Option 1: Do Nothing

33. There are no additional benefits from this option.

Option 2: Revised Set Of Regulations Supported By A New ACoP or Guidance

Safety Benefits To Construction Workers

34. Two strategies have been used to estimate the safety benefits of the proposed Regulations: (1) a comparison of the injury statistics of the Engineering Construction Industry Association (ECIA) and the sector as a whole, and (2) an Influence Network approach.

Comparison with the Engineering Construction Industry Association’s Injury Rates

35. The Engineering Construction Industry Association (ECIA) is known to follow best practice and has injury rates lower than the construction sector as a whole. If the construction sector adopts best practice, as set out in the proposed Regulations, injury rates could potentially fall to the same levels as ECIA projects. Hence, the safety benefit of the proposed Regulations has been estimated as the value of accidents that would be

prevented if the construction sector's injury rate falls to the same level as ECIA's injury rate.

36. Using data on all injuries reported under RIDDOR, the injury rate of the construction sector as a whole was 2.4 times worse than ECIA projects in 2002 and 2.1 times worse in 2003. Hence, if the construction sector injury rate falls to the same level as the ECIA injury rate (a fall of between 54% and 60%), the present value health and safety benefit of the proposed Regulations is £2,889 to £3,290 million (reportable injuries only) over the appraisal period. If minor injuries and non-injury accidents are included the present value benefit is £7,950 to £8,917 million over the appraisal period¹².
37. The estimates above have been calculated on the basis of 100% compliance. To account for compliance it has been assumed that the safety benefits of the proposed Regulations are related to the level of compliance with the duty on contractors to plan, manage and monitor their work¹³. This duty has been used because it is central to the proposed Regulations and it encompasses a number of other duties set out in the proposed Regulations. Under this assumption the expected safety benefit, given expected compliance, is £290 to £897 million (reportable injuries only) or £795 to £2,432 million (reportable injuries, minor injuries and non-injury accidents)¹⁴.
38. The following caveats should be placed on these estimated benefits: (1) ECIA projects are not a representative sample of all construction projects¹⁵, so if the type of project is a

¹² RIDDOR Injuries and Injury Rates for ECIA

Year	Number of Employees	RIDDOR Injuries	RIDDOR rate per 100000
2002	36 273	176	485.2
2003	35 649	184	516.1

RIDDOR Injuries and Injury Rates for the Construction Sector excluding ECIA.

Year	Number of Employees	RIDDOR Injuries	RIDDOR rate per 100000
2002	1 064 683	12 858	1,207.7
2003	1 089 800	12 150	1,114.9

Estimated benefits have been calculated as follows: the total cost of injuries in the construction (excluding ECIA) sector has been multiplied by one minus the ratio between the ECIA injury rate and the whole sector (excluding ECIA) injury rate. One minus the ratio between the ECIA injury rate and the whole sector (excluding ECIA) injury rate is the expected reduction in cost of injuries in the construction sector if the injury rate of the whole sector falls to the ECIA injury rate.

¹³ The current compliance level is a best-estimate based on HSE Inspectors' experiences.

¹⁴ This cost has been calculated as follows: the safety benefit estimated assuming 100% compliance has been multiplied by the expected increase in compliance (for contractors plan, managing and monitoring) divided by the current level of non-compliance.

¹⁵ There are almost no self employed ECIA members, ECIA projects include power stations and other large construction projects, and there are higher levels of unionisation among ECIA members than non-ECIA members.

factor influencing the injury rate this may bias the estimated benefits (benefits could be over or under estimated); (2) it has been assumed that the distribution of injury types is the same for ECIA as for the whole sector; (3) reporting rates are expected to be higher for ECIA projects than non-ECIA projects, so estimated benefits will be biased and underestimated; and (4) the employment figures used to calculate injury rates are less reliable for the ECIA rates than for the sector as a whole.

Influence Network Approach

39. The second approach used is the influence network¹⁶ approach that provides a framework in which to consider the wide variety of factors influencing health and safety performance. It should be noted that the influence network only provides a framework for discussion, so any output is based on the perceptions of those attending the forum and not quantitative data.
40. A forum was held within HSE to consider the impact of the proposed Regulations on health and safety performance (assuming 100% compliance). The baseline for the discussion was a forum held previously within HSE on the health and safety performance of the construction sector¹⁷.
41. Using the relationship between the risk index and the level of risk set out in '*Improving health and safety in construction, Phase 2, Volume 6*', the reduction of risk in the construction sector as a result of the proposed Regulations is estimated at 34%. Assuming that risk is directly related to the total cost of injuries (i.e. a 10% reduction in risk leads to a 10% reduction in the cost of injuries and accidents in the construction sector), the health and safety benefits of the proposed Regulations have been estimated at £1,822 to £1,856 million (reportable injuries only) or £4,997 to £5,031 million (including minor injuries and non-injury accidents) over the appraisal period.
42. The estimates above have been calculated on the basis of 100% compliance. To account for compliance it has been assumed that the safety benefits of the proposed Regulations are related to the level of compliance with the duty on contractors to plan, manage and monitor their work¹⁸. This duty has been used because it is central to the proposed Regulations and it encompasses a number of other duties set out in them. Under this assumption the expected safety benefit, given expected compliance, is £182

¹⁶ For further information see: <http://www.hse.gov.uk/research/rrhtm/rr235.htm>

¹⁷ For further information see: <http://www.hse.gov.uk/research/rrhtm/rr231.htm> Page 46.

¹⁸ The current compliance level is a best-estimate based on HSE Inspectors' experiences.

to £506 million (reportable injuries only) or £500 to £1,372 million (reportable injuries, minor injuries and non-injury accidents)¹⁹.

Health Benefits To Construction Workers

43. It has not been possible to estimate the benefits from a reduction in the incidence of ill health although they could be substantial. To indicate the cost of ill health in the construction sector, '*The costs to Britain of workplace accidents and work-related ill health in 1995/96*' estimated the cost of ill health in construction at £0.70 to £0.75 billion in 1995/96 (1995/96 prices).

Health And Safety Benefits From Designers Considering The Risk With The Intended Use Of Buildings Designed As Places Of Work

44. Health and safety benefits are expected to flow from explicitly requiring designers to consider the risks associated with structures intended as a place of work. In some cases, building design is a factor contributing to injuries. For instance, the position of lighting can affect the use of ladders in a building and therefore the risks posed to workers maintaining a building. It has not been possible to quantify the health and safety benefits flowing from this requirement because it is not possible to identify the number of injuries (outside of construction personnel) in which building design is a contributory factor.

Other Benefits

*Productivity Improvements*²⁰

45. The focus of the proposed Regulations aligns closely with other initiatives to improve project management and team working in construction. One element of this has been the Movement for Innovation that has tested out the effect of the practical application of these principles on demonstration projects. They wanted to measure the practical benefits of the application of:

- innovative ways of delivering projects, processes and products;
- Respect for People;
- sustainable development;

¹⁹ This benefit has been calculated as follows: the safety benefit estimated assuming 100% compliance has been multiplied by the expected increase in compliance (for contractors plan, managing and monitoring) divided by the current level of non-compliance.

²⁰ The cost saving from reduced project cost has been calculated as follows: the value of the construction sector has been multiplied by the expected reduction in project costs and the expected increase in the level of compliance with the duty on contractors to plan, manage and monitor. The duty to plan, manage and monitor has been used because many of the productivity improvements expected to result from the proposed regulations are intimately linked with planning, managing and monitoring.

- measurement of improvements based on clear benchmarks; and
 - involving the whole supply chain in the whole process at the earliest possible stage, preferably design.
46. The data from the demonstration projects has shown that, compared with the rest of the industry, demonstration projects:
- are more predictable in terms of cost and time;
 - are more productive than the industry average;
 - are safer;
 - have less impact on the environment; and
 - achieve higher customer satisfaction.
47. If the whole industry achieved the same results as the 'Demonstrations' then project costs could potentially fall by 6%²¹. If it is assumed that implementation of the proposed Regulations leads to a 3% reduction in project costs for projects where there is currently insufficient attention by clients, designers and contractors to planning, managing and monitoring - then the present value cost saving from reduced project costs for all projects is £1,162 to £3,486 million over the appraisal period.

Amendment To The Management Of Health And Safety at Work Regulations 1999

48. There may be additional benefits from the amendments to the Management of Health and Safety at Work Regulations 1999 (see 'other costs' section below). It has not been possible to quantify these benefits.

Cost Savings

*Checking Competence*²²

49. Research commissioned by HSE is underway to develop guidelines for the selection of competent designers and contractors. These are likely to be based on current good practice and existing schemes for assessing competency and ability to allocate adequate resource. It is expected that they will be particularly helpful to one-off or occasional clients and SMEs.
50. As a result of the guidelines, the cost to clients of ensuring designer and contractor competence is expected to fall. Designers and contractors should already be competent to fulfil the functions for which they are seeking appointment. Information provided to clients should be simpler and based on designer/contractor accreditation (thereby

²¹ <http://www.constructingexcellence.org.uk/productivity/demonstration.jsp?level=0>

²² This cost has been calculated as follows: the number of projects has been multiplied by the reduction in the number of hours expected for this duty to be performed, the client wage (adding 30% for non-wage labour costs) and the level of compliance with this duty.

minimising the number of inappropriate applications and enabling easy weeding out by clients). The proposed guidelines place the onus on the potential appointee to gather and provide supporting evidence for the client and should reap dividends in reduced paperwork and costs.

51. The cost benefit analysis for CDM 1994 estimated that checking competence would take clients 4 hours for over 4 worker non-notifiable projects and 12 hours for notifiable projects. It has been estimated that under the proposed Regulations this should fall by half for both types of project. With compliance estimated at 15% to 20% for over 4 worker non-notifiable projects and 30% to 35% for notifiable projects²³, the present value cost saving for clients is estimated at between £6.4 and £8.6 million for over 4 worker non-notifiable projects and £115.7 to £135.0 million for notifiable projects over the appraisal period.
52. These are policy cost savings and are included in the net costs.

Total Benefits

Option 1: Do Nothing

53. No benefits are expected for option 1.

Option 2: Revised Set Of Regulations Supported By A New ACoP or Guidance

Table 7: Benefits Of Option 2

	Present Value of Benefits Over Appraisal Period, £M	Annualised Benefits £M
Safety Benefits		
<i>ECIA Approach</i>		
Reportable Injuries	290 to 897	34 to 104
All Injuries and Accidents	795 to 2,432	92 to 283
<i>Influence Network Approach</i>		
Reportable Injuries	182 to 506	21 to 59
All Injuries and Accidents	500 to 1,372	58 to 159
Injuries and Ill Health in the Workplace	Unquantified	Unquantified
Health Benefits	Unquantified	Unquantified
Other Benefits	0	0
Productivity Improvements	1,162 to 3,486	135 to 405
<u>Total Benefits Using ECIA Approach</u>	<u>1,957 to 5,918</u>	<u>227 to 688</u>

Costs

Business Sectors Affected

54. The British Construction industry is extremely diverse with client, contractors and designers ranging from the self-employed to multi-national companies. There are

around 168,000 contractors, 95% of which are small/ micro sized companies; 18,000 design firms and many clients. It is not possible to characterise clients because everyone in Britain is potentially a construction client and could be an individual or an organisation from any business sector (this includes local authorities, school governors, insurance companies and project originators on Private Finance Initiative projects). It follows that all business sectors are likely to be affected, at some stage, by the proposed Regulations as they are by the current Regulations.

Total Compliance Costs To Business

Option 1: Do Nothing

55. There are no additional costs from this option.

Option 2: Revised Set Of Regulations Supported By A New ACoP or Guidance

56. There are two sets of costs resulting from the proposed Regulations: (1) the costs of compliance with new duties in addition to CDM 1994, and (2) the costs of compliance with existing duties under CDM 1994.

Cost of Compliance with Additional Duties

*Familiarisation*²⁴

57. There are three main groups that will be required to familiarise themselves with the proposed Regulations: contractors, designers and clients.

58. Familiarisation costs for contractors have been estimated on the following basis: (1) there are 168,000 contractors; (2) it has been assumed that familiarisation will take 8 hours per contractor; (3) those familiarising themselves receive the contractor wage; (4) 19,000 new contractors enter the market each year²⁵; (5) the estimated expected level of compliance is 60% to 70%²⁶; and (6) it has been estimated that 60% to 70% of new firms will face no additional familiarisation costs because they would have familiarised

²³ The current compliance level is a best-estimate based on HSE Inspectors' experiences.

²⁴ Familiarisation costs have been estimated by multiplying the number of firms by the length of time required for familiarisation, the average wage (adding 30% for non-wage labour costs) and the expected level of compliance.

Added to this is the cost of familiarisation for new firms: the expected number of new firms per year multiplied by the length of time required for familiarisation, the average wage (adding 30% for non-wage labour costs) and the expected increase in the level of compliance (note, some new firms are expected to be compliant i.e. they will face no additional costs for familiarisation because they would familiarise themselves with CDM 1994 if the proposed regulations are not implemented).

²⁵ Source: DTI/ Small Business Service. Estimate for 2002.

²⁶ The current compliance level is a best-estimate based on HSE Inspectors' experiences and industry sources.

themselves with CDM 1994 if the proposed Regulations were not introduced. The present value cost of familiarisation for contractors is estimated at £14.3 to £21.8 million over the appraisal period.

59. Familiarisation costs for designers have been estimated with the following information: (1) there are 18,000 design firms²⁷; (2) it has been assumed that familiarisation will take 6 hours per firm; (3) the person familiarising himself receives the average designer wage; (4) it has been estimated that the turnover of firms is 5% per year; (5) the estimated expected level of compliance is 50%²⁸; and (6) it has been estimated that 50% of new firms will face no additional familiarisation costs because they would have familiarised themselves with CDM 1994 if the proposed Regulations were not introduced. The present value cost of familiarisation for designers is estimated at £1.2 million over the appraisal period.
60. It has not been possible to quantify the cost to clients of familiarising themselves with the proposed Regulations because the number of clients per year is unknown. Further analysis is provided in the uncertainties section.
61. This is an implementation cost.

Designers

*Consider The Risks With Buildings Designed As Places Of Work*²⁸

62. Under the proposed Regulations, designers will be required to consider risks with the intended use of buildings designed as places of work. This may include, but is not limited to, considering the position of light fittings, access to cables and ventilation, and the inclusion of fragile materials. The cost estimate has been calculated with the following information: (1) the total cost of designers is £13 billion per year; (2) 65% of designer costs is the design stage²⁹; (3) it has been assumed that the design stage will increase in cost by between 3% and 5%; (4) the annual output of contractors is £77bn of which £50bn³⁰ is the value of work designed as a place of work; (5) it has been

²⁷ Architects: 8,882, Civil & Structural Engineers: 6,309; Building Services Engineer: 1,875. Total 17,066 in 2002. <http://www.dti.gov.uk/construction/stats/constat2004.pdf>

²⁸ This cost has been calculated as follows: the total value of design work has been multiplied by the proportion of design costs that constitute the design stage, the expected increase in the cost of the design stage as a result of the proposed regulations, the proportion of construction output which is designed as a place of work and the expected increase in the level of compliance with this duty.

²⁹ Source: 18 design firms were consulted to arrive at this estimate.

³⁰ Construction output minus infrastructure and housing. Source: DTI/ N Crisp.

estimated that the level of compliance with this requirement is 30% to 35%³¹ and that this will increase to 45%; and (6) it has been assumed that the cost of designers considering the risk with intended use of workplaces will fall by 20% each year as designers' experience of considering the risks arising from their designs increases.

63. The present value cost of this duty is estimated at between £67.0 and £167.5 million over the appraisal period.

64. This is a policy cost.

Contractors

*Plan, Manage And Monitor Their Work*³²

65. Under the proposed Regulations, contractors will have a duty to plan, manage and monitor their work to ensure their workers are safe and that the work is carried out in accordance with the construction phase plan. This means taking account of risk assessments carried out under the Management Regulations, and complying with other relevant health, safety and welfare requirements.

66. The cost of this requirement has been estimated using the following information: (1) it has been estimated that 45% to 50% of contractors are compliant with the proposed duty and has been estimated to increase to 55% to 60%³³; (2) the total value of contractor work is £77 billion per year; (3) it has been estimated that the proportion of project costs spent on planning is 3%; and (4) it has been assumed that planning costs will increase by 30%. The present value cost of this duty is estimated at £298.3 to £894.8 million over the appraisal period.

67. This is a policy cost.

Under 5 Worker Non-Notifiable Projects

68. The proposed Regulations will bring under 5 worker non-notifiable projects within the scope of the proposed Regulations. The cost estimates below have been made on the basis that there are 200,000 under 5 worker non-notifiable projects in the UK per year.

³¹ The current compliance level is a best-estimate based on HSE Inspectors' experiences.

³² This cost has been calculated as follows: the total value of contractor work has been multiplied by the estimated proportion of project costs spent on planning, the expected increase in the proportion of project costs spent on planning and the expected increase in the level of compliance with this duty.

³³ The current compliance level is a best-estimate based on HSE Inspectors' experiences.

*Ensure Arrangements To Manage Health And Safety*³⁴

69. The client has a duty to ensure that there are arrangements to manage health and safety. This means ensuring that the requirements for running the project take account of any risks to the public, their employees, customers and those of the site occupier. Clients also need to consider the roles, functions and responsibilities of the project team members and how they interrelate; how communication, co-ordination and co-operation will be facilitated; the format of the health and safety file (to ensure it is suitable for them); and how the project will be monitored and reviewed.
70. The cost to clients of this duty has been estimated with the following information: (1) it has been estimated that there is 10% to 15% compliance with this requirement that will increase to between 25% and 30%³⁵; and (2) it has been estimated that it takes between 1 and 2 hours for clients to perform this task. The present value cost of clients ensuring there are arrangements for health and safety is estimated at £4.3 to £17.1 million over the appraisal period.
71. This is a policy cost.

*Check The Competence Of Designers And Contractors*³⁶

72. The client has a duty to ensure that their appointees are competent. The intention is to make it easier to assess competence and to reduce the cost of this duty (see below for further information). The cost to clients of checking competence has been estimated with the following information: (1) it has been estimated that there is 10% to 15% compliance with this requirement that will increase to between 25% and 30%; and (2) it has been estimated that it takes between 0.5 and 1 hours for contractors to perform this task. The present value cost of checking competence is estimated at £2.1 to £8.6 million over the appraisal period.
73. This is a policy cost.

³⁴ This cost has been calculated as follows: the number of projects has been multiplied by the number of hours expected for this duty to be performed, the client wage (adding 30% for non-wage labour costs) and the expected increase in the level compliance with this duty.

³⁵ The current compliance level is a best-estimate based on HSE Inspectors' experiences, the increase in compliance builds on this.

³⁶ This cost has been calculated as follows: the number of projects has been multiplied by the number of hours expected for this duty to be performed, the contractor wage (adding 30% for non-wage labour costs) and the expected increase in the level compliance with this duty.

*Ensuring Information Is Available*³⁷

74. The client has a duty to provide information they have, or could reasonably obtain, about the state of the land or premises that may need to be considered in complying with health and safety regulations. The cost to clients of ensuring information is available has been estimated with the following information: (1) it has been estimated that there is 8% to 12% compliance with this requirement that will increase to between 15% and 20%³⁸; and (2) it has been estimated that it takes between 0.5 and 3 hours for clients to perform this task. The present value cost to clients of providing information is estimated at £0.6 to £15.4 million over the appraisal period.

75. This is a policy cost.

*Information and Training Costs*³⁹

76. The cost to contractors of providing information and training has been estimated with the following information: (1) it has been estimated that there is 15% to 20% compliance with this requirement that will increase to between 25% and 30%⁴⁰; (2) it has been estimated that it takes between 0.5 and 2 hours for contractors to perform this task; and (3) it has been estimated that 20% of projects have specific hazards that require information and training. The present value cost to contractors of information and training is estimated at £0.2 to £2.1 million over the appraisal period.

77. This is a policy cost.

Over 4 Worker Non-Notifiable Projects and Notifiable Projects

78. The cost estimates below have been made on the basis that there are 100,000 over 4 worker non-notifiable projects per year and 300,000 notifiable projects per year. (200,000 projects are notified to HSE each year but notification is subject to under reporting).

³⁷ This cost has been calculated as follows: the number of projects has been multiplied by the number of hours expected for this duty to be performed, the client wage (adding 30% for non-wage labour costs) and the expected increase in the level compliance with this duty.

³⁸ The current compliance level is a best-estimate based on HSE Inspectors' experiences, the increase in compliance builds on this.

³⁹ This cost has been calculated as follows: the number of projects has been multiplied by the proportion of projects where specific hazards require information and training, the number of hours expected for this duty to be performed, the client wage (adding 30% for non-wage labour costs) and the expected increase in the level compliance with this duty.

⁴⁰ The current compliance level is a best-estimate based on HSE Inspectors' experiences, the increase in compliance builds on this.

*Ensure Arrangements To Manage Health And Safety*⁴¹

79. The cost to clients of over 4 worker non-notifiable projects of ensuring that there are arrangements to manage health and safety has been estimated with the following information: (1) it has been estimated that there is 15% to 20% compliance with this requirement that will increase to between 25% and 30%; and (2) it has been estimated that it takes between 1 and 2 hours for clients to perform this duty. The present value cost of clients ensuring there are arrangements for health and safety is estimated at £1.1 to £6.4 million over the appraisal period.
80. For notifiable projects it has been estimated that 20% to 25% of projects are compliant increasing to between 35% and 40%⁴², and that it will take 8 hours for clients to perform these tasks. The present value cost is estimated at £51.4 to £102.8 million over the appraisal period.
81. These are policy costs.

Removal Of The Exemption From Civil Liability

82. Breaches of CDM 1994 carry no civil liability, except in relation to the client's duty to ensure that construction work does not start without a health and safety plan and the principal contractor's duty to ensure that only authorised persons are allowed into premises where construction work is being carried out. Breaches of the proposed Regulations carry no civil liability in relation to people who are not an employee, except in relation to the client's duty to ensure construction work does not start without a construction phase plan and the principal contractor's duty to ensure the contractor has the information needed to carry out the construction work safely. No additional costs are expected from the wider removal of the exemption from civil liability in relation to employees, because the Management of Health and Safety at Work Regulations 1999 (which apply to all construction projects) have already been amended to remove such an exemption.

Cost of Compliance with Existing Duties under CDM 1994

83. In theory, if compliance with current duties is 100%, there should be no additional costs for complying with CDM 1994. The cost set out below reflect the current lack of compliance with CDM 1994 and therefore costs that may be imposed upon society by the proposed Regulations increasing the level of compliance with duties set out in CDM

⁴¹ This cost has been calculated as follows: the number of projects has been multiplied by the number of hours expected for this duty to be performed, the client wage (adding 30% for non-wage labour costs) and the expected increase in the level compliance with this duty.

⁴² The current compliance level is a best-estimate based on HSE Inspectors' experiences, the increase in compliance builds on this.

1994. It should be noted that these costs have previously been estimated in the Cost Benefit Analysis for CDM 1994.

Designers

*CDM Training*⁴³

84. The cost of designers receiving training to become CDM competent has been estimated using the following information: (1) there are 225,000 designers⁴⁴; (2) it has been estimated that 40% of designers have received CDM training and that an additional 5% to 10% will receive CDM training as a result of the proposed Regulations; (3) it has been estimated that the turnover of designers is 5% per year; (4) it has been assumed that 40% of new designers will receive CDM training without the implementation of the proposed Regulations; (5) the cost of training is between £50⁴⁵ and £230⁴⁶ for a one day training course; and (6) designers receive the average designer wage which reflects the lost output of the designer whilst on the training course. The present value cost of CDM training for designers is estimated at £3.6 to £12.7 million over the appraisal period.

85. This is a policy cost.

Over 4 Worker Non-Notifiable Projects and Notifiable Projects

*Co-ordinator*⁴⁷

86. It is proposed that co-ordinators will:

⁴³ The cost of CDM training is formed of two components: the one off cost of training current designers and the on going cost of training new designers.

The one off cost has been calculated as follows: the number of designers has been multiplied by the proportion of designers not trained but are expected to be trained following implementation of the proposed regulations, and the sum of the lost output from receiving the training and the cost of the training.

The cost of training new designers has been calculated as follows: the number of designers has been multiplied by the annual turnover of designers, the proportion of designers who would not have received CDM training prior to the implementation of the proposed regulations but will as a result of the proposed regulations, and by the sum of the lost output from receiving the training (reflected in the wage of the designers, with additional non-wage labour costs) and the cost of the training.

⁴⁴ Source: Experian/CITB research.

⁴⁵ Source: BPS Consulting Website.

⁴⁶ Source: SERCO Website.

⁴⁷ This cost has been calculated by adding the following: (1) Appoint co-ordinator: the number of projects multiplied by the number of hours expected for a co-ordinator to be appointed, the client wage (adding 30% for non-wage labour costs) and the expected increase in the level compliance with this duty, and, (2) co-ordinator: the value of construction work multiplied by the cost of co-ordinators as a proportion of project costs and the expected increase in the level compliance with this duty.

- advise and assist clients to comply with their duties;
- co-ordinate design work, planning and other preparation for construction;
- liaise with the principal contractor about design changes during construction;
- notify HSE about the project;
- locate or commission the information needed by designers and contractors; and
- produce or update the health and safety file.

87. This role is the successor to that of the Planning Supervisor. Planning Supervisors were estimated to cost 1.1% of project costs in the Evaluation of the Construction (Design and Management) Regulations 1994⁴⁸. In addition, the following information has been used to estimate costs: (1) it has been estimated that there is 15% to 20% compliance among over 4 worker non-notifiable projects (increasing to 30% to 35%) and 60% to 65% compliance among notifiable projects (increasing to 70% to 75%)⁴⁹; (2) the value of over 4 worker non-notifiable projects is £22 billion per year; (3) the value of notifiable projects is £50 billion per year; and (4) it has been estimated that clients take 2.5 hours to appoint a co-ordinator. The present value cost of co-ordinators for over 4 worker non-notifiable projects is estimated at £213.7 to £427.3 million and £244.7 to £723.2 million for notifiable projects over the appraisal period.

88. These are implementation costs.

*Check The Competence Of Co-ordinators, Designers And Contractors*⁵⁰

89. The cost to clients of checking the competence of co-ordinators, designers and contractors has been estimated using the following information for over 4 worker non-notifiable projects: (1) it has been estimated that there is 15% to 20% compliance with this requirement increasing to between 30% and 35%; and (2) it has been estimated that it takes 2 hours for clients to perform this task. The present value cost of clients checking competence is estimated at £4.3 to £8.6 million over the appraisal period.

90. For notifiable projects it has been estimated that compliance is 30% to 35% (increasing to between 45% and 50%)⁵¹ and the checks take 6 hours to perform. The present value cost is estimated at £38.6 to £77.1 million over the appraisal period.

91. These are policy costs.

⁴⁸ http://www.hse.gov.uk/research/crr_hm/1997/crr97158.htm

⁴⁹ The current compliance level is a best-estimate based on HSE Inspectors' experiences, the increase in compliance builds on this.

⁵⁰ This cost has been calculated as follows: the number of projects has been multiplied by the number of hours expected for this duty to be performed, the client wage (adding 30% for non-wage labour costs) and the expected increase in the level compliance with this duty.

*Ensuring Information Is Available*⁵¹

92. The cost to clients of ensuring information is available for over 4 worker non-notifiable projects has been estimated using the following information: (1) it has been estimated that there is 15% to 20% compliance with this requirement (increasing to between 25% and 30%); and (2) it has been estimated that it takes 12 hours for clients to perform this task. The present value cost for over 4 worker non-notifiable projects is estimated at £12.9 to £38.6 million over the appraisal period.
93. For notifiable projects it has been estimated that 25% to 30% of projects are compliant (increasing to between 40% to 45%) and that it takes 24 hours for this task to be performed. The present value cost for notifiable projects is estimated at £154.2 to £308.5 million over the appraisal period.
94. These are policy costs.

*Information and Training Costs*⁵²

95. The cost to contractors of information and training has been estimated using the following information for over 4 worker non-notifiable projects: (1) it has been estimated that there is 15% to 20% compliance with this requirement (increasing to between 25% to 30%); (2) it has been estimated that it takes 8 hours for contractors to perform this task; and (3) it has been estimated that 20% of projects require information and training. The present value cost to contractors of information and training on over 4 worker non-notifiable projects is estimated at £1.4 to £4.3 million over the appraisal period.
96. For notifiable projects it has been estimated that compliance is 25% to 30% (increasing to between 40% to 45%) and that performing this duty takes 16 hours to perform. The present value cost to contractors is estimated at £17.1 to £34.2 million over the appraisal period.
97. These are policy costs.

⁵¹ This cost has been calculated as follows: the number of projects has been multiplied by the number of hours expected for this duty to be performed, the client wage (adding 30% for non-wage labour costs) and the expected increase in the level compliance with this duty.

⁵² This cost has been calculated as follows: the number of projects has been multiplied by the proportion of projects where specific hazards require information and training, the number of hours expected for this duty to be performed, the contractor wage (adding 30% for non-wage labour costs) and the expected increase in the level of compliance with this duty.

*Worker Involvement*⁵³

98. Under this duty, principal contractors are required to consult with their employees. The cost to contractors of this duty has been estimated using the following information: (1) it has been estimated that there is 20% to 25% compliance with this duty on notifiable projects (increasing to between 25% to 30%) and 15% to 20% compliance on non-notifiable over 4 worker projects (increasing to between 20% to 25%)⁵⁴; and (2) it has been estimated that it takes between 4 and 12 hours for contractors to perform this task. The present value cost to contractors is estimated at £0 to £21.3 million for non-notifiable over 4 worker projects and £0 to £64.0 for notifiable projects, over the appraisal period.

99. This is a policy cost.

Other Duties

100. No additional costs are expected for appointing a principal contractor because compliance is estimated at 100%.

101. No additional costs are expected for the following duties to be performed: provision for health and safety and notification of a project.

Costs to HSE

Option 1: Do Nothing

102. There are no additional costs from this option.

Option 2: Revised Set Of Regulations Supported By A New ACoP or Guidance

*Inspector Training*⁵⁵

103. All 150 construction inspectors will undertake training to familiarise themselves with the proposed Regulations. The cost of training has been estimated under the following assumptions: (1) training lasts 8 hours; (2) the only cost of the training is lost output; and (3) the average inspector's salary is equivalent to a Band 3 inspector's salary. The present value cost of inspector training has been estimated at £40,000.

104. This is an implementation cost.

⁵³ This cost has been calculated as follows: the number of projects has been multiplied by the number of hours expected for this duty to be performed, the contractor wage (adding 30% for non-wage labour costs) and the expected increase in the level of compliance with this duty.

⁵⁴ The current compliance level is a best-estimate based on HSE Inspectors' experiences, the increase in compliance builds on this.

⁵⁵ The cost of training HSE's inspectors has been calculated as follows: the number of inspectors has been multiplied by the number of hours of training expected and the typical inspector wage (adding 30% for non-wage labour costs).

Evaluation of the CDM Regulations

105. As part of the policy making process there will be an evaluation of the proposed Regulations. There are two stages to the evaluation: collecting baseline data and an impact evaluation 5 years after the proposed Regulations have been implemented. It has been estimated that each stage will cost between £75,000 and £100,000. This has a present value of between £140,000 and £180,000 over the appraisal period.

106. This is an implementation cost.

*Policy Development*⁵⁶

107. As part of the policy making process, the proposed Regulations will be monitored and evaluated. It has been estimated that the cost of policy development will be equivalent to the cost of half a Band 4 member of staff each year of the appraisal period. This has a present value cost of £160,000 to £180,000 over the appraisal period.

108. This is an implementation cost.

Other Costs

Option 1: Do Nothing

109. There are no additional costs from this option.

Option 2: Revised Set Of Regulations Supported By A New ACoP or Guidance

*Amendment To The Management Of Health And Safety at Work Regulations 1999*⁵⁷

110. The proposed Regulations are also being used as a vehicle to amend the Management of Health and Safety at Work Regulations 1999. The effect of the amendments is to require the self-employed to:

- apply the principles of prevention and protection; and
- make and give effect to arrangements for planning, control and monitoring of the arrangements.

⁵⁶ This cost has been calculated as follows: the salary range for a Band 4 member of staff (including non-wage labour costs) for 2002 has been updated to 2003 prices using the New Earnings Survey earnings index and halved.

⁵⁷ Amendment of the Management of Health and Safety at Work Regulations 1999

28. The Management of Health and Safety at Work Regulations 1999 shall be amended—

- (a) in regulation 4, by inserting “or self-employed person” after “employer”;
- (b) in regulation 5(1), by inserting “self-employed person” after “employer”;
- (c) in regulation 7(5), by substituting “an individual who is an employer and” for “a self-employed employer”.

111. It has not been possible to estimate these costs.

Environmental Impacts

112. No environmental impacts are expected from either option.

Total Costs To Society

Option 1: Do Nothing

113. There are no additional costs from this option.

Option 2: Revised Set Of Regulations Supported By A New ACoP or Guidance Table 8: Costs Of Option 2⁵⁸

	Present Value Over Appraisal Period, £M	Annualised Value £M
Additional Duties		
Familiarisation		
Contractors	£14.3 to £21.8	£1.7 to £2.5
Designers	£1.2	£0.1
Clients	Unquantified	Unquantified
Designers:		
Consider Risks With Intended Use	£67.0 to £167.5	£7.8 to £19.5
Contractors:		
Plan, Manage And Monitor Their Work	£298.3 to £894.8	£34.7 to £104.0
Under 5 Worker Non-Notifiable Projects:		
Ensure Arrangements To Manage Health And Safety	£4.3 to £17.1	£0.5 to £2.0
Check The Competence Of Designers And Contractors	£2.1 to £8.6	£0.2 to £1.0
Ensuring Information Is Available Information and Training	£0.6 to £15.4 £0.2 to £2.1	£0.1 to £1.8 * to £0.2
Over 4 Worker Non-Notifiable Projects and Notifiable Projects:		
Ensure Arrangements To Manage Health And Safety		
Notifiable Projects	£51.4 to £102.8	£6.0 to £11.9
Over 4 Worker Non-Notifiable Projects	£1.1 to £6.4	£0.1 to £0.7
Removal Of The Exemption From Civil Liability	0	0
HSE:		
Inspector Training	*	*
Evaluation	£0.1 to £0.2	*
Policy Development	£0.2 to £0.2	*
Existing Duties		
Designers:		
CDM Training	£3.6 to £12.7	£0.4 to £1.5
Over 4 Worker Non-Notifiable Projects and Notifiable Projects		
Co-ordinator		
Notifiable Projects	£244.7 to £734.2	£28.4 to £85.3
Over 4 Worker Non-Notifiable Projects	£213.7 to £427.3	£24.8 to £49.6

⁵⁸ These figures may not add up due to rounding. * figure less than £50,000.

	Present Value Over Appraisal Period, £M	Annualised Value £M
Check The Competence Of Planning Supervisor, Designers And Contractors <i>Notifiable Projects</i>	£38.6 to £77.1	£4.5 to £9.0
<i>Over 4 Worker Non-Notifiable Projects</i>	£4.3 to £8.6	£0.5 to £1.0
Ensuring Information Is Available <i>Notifiable Projects</i>	£154.2 to £308.5	£17.9 to £35.8
<i>Over 4 Worker Non-Notifiable Projects</i>	£12.9 to £38.6	£1.5 to £4.5
Information and Training <i>Notifiable Projects</i>	£17.1 to £34.2	£2.0 to £4.0
<i>Over 4 Worker Non-Notifiable Projects</i>	£1.4 to £4.3	£0.2 to £0.5
Worker Involvement <i>Notifiable Projects</i>	£0 to £64.0	£0 to £7.4
<i>Over 4 Worker Non-Notifiable Projects</i>	£0 to £21.3	£0 to £2.5
Cost Savings		
Checking Compliance <i>Notifiable Projects</i>	£115.7 to £135.0	£13.4 to £15.7
<i>Over 4 Worker Non-Notifiable Projects</i>	£6.4 to £ 8.6	£0.7 to £1.0
Amend Management of Health and Safety Regulations	Unquantified	Unquantified
Total Net Cost	£1,009 to £2,846	£117 to £330

Compliance Costs For A 'Typical' Business⁵⁹

Option 1: Do Nothing

114. No additional costs are expected from this option.

Option 2: Revised Set Of Regulations Supported By A New ACoP or Guidance

115. It is not possible to estimate the cost of the proposed Regulations for a typical business because the businesses affected by the proposed Regulations are diverse. For illustrative purposes the costs of four example projects have been presented: (1) a notifiable project where businesses are following best practice; (2) an under 5 worker non-notifiable project not compliant with the proposed Regulations; (3) a notifiable project compliant with CDM 1994 but not the proposed Regulations; and (4) a notifiable project not compliant with CDM 1994 or the proposed Regulations.

116. Costs have also been separated into business specific costs and project specific costs, because business specific costs are one off costs that are difficult to allocate on a project basis.

Business Specific Costs

Clients

117. Clients will face two costs as a result of the proposed Regulations: familiarisation costs and costs flowing from the removal of the exemption from civil liability.

⁵⁹ Figures may not add up due to rounding.

118. The present value cost of familiarisation has been estimated at £200⁶⁰.

119. It has not been possible to estimate the cost of removing the exemption from civil liability, but this is not expected to impose significant costs on the construction sector because there is no exemption from liability under the Construction (Health, Safety and Welfare) Regulations 1996 or the Management of Health and Safety At Work Regulations 1999 (MHSWR).

Contractors

120. Contractors will face two costs as a result of the proposed Regulations: familiarisation costs and costs flowing from the removal of the exemption from civil liability.

121. The present value cost of familiarisation has been estimated at £170.

122. It has not been possible to estimate the cost of removing the exemption from civil liability, but this is not expected to impose significant costs on the construction sector because there is no exemption from liability under the Management of Health and Safety At Work Regulations 1999 (MHSWR).

Designers

123. Designers will face three costs as a result of the proposed Regulations: familiarisation costs, CDM training costs and costs flowing from the removal of the exemption from civil liability.

124. The present value cost of familiarisation has been estimated at £90.

125. To estimate the cost of CDM training to design businesses the following assumptions have been made: (1) no designers in the example business have received CDM training; (2) the number of designers per businesses is equal to the total number of designers divided by the number of design businesses; and (3) the turnover of designers is 5% per year. Under these assumptions, the cost of CDM training is £3,960 to £7,070⁶¹.

126. Removing the exemption from civil liability is not expected to impose costs on the designers, as only employees will have a right of claim.

127. Under the assumptions set out above, the total cost of the proposed Regulations is £4,050 to £7,150 over the appraisal period.

⁶⁰ This has been calculated by multiplying the wage of a client (adding 30% for non-wage labour costs) by the number of hours familiarisation is expected to take.

⁶¹ The one off cost has been calculated by multiplying the number of workers per business (the total number of designers divided by the number of businesses) by the cost of the training course and the lost output incurred as a result of designers attending the course. The recurring cost is 5% of the one off cost.

Project Specific Costs

Notifiable Project Following Best Practice

128. A project where client, contractors and designers are already following best practice will have no additional per project costs imposed on it by the proposed Regulations. There will be per project cost savings for clients from a simplified procedure for checking the competence of contractors and designers. The cost saving in checking competence is estimated at £150⁶².

129. The total cost of the proposed Regulations is minus £150.

Under 5 Worker Non-Notifiable Project Not Compliant With The Requirements Of CDM 2006

130. For an under 5 worker project where neither the client, contractor or designer is compliant with the proposed Regulations there will be the following costs: designers considering risks with intended use; contractors planning, managing and monitoring their work; clients ensuring there are arrangements to manage health and safety; clients checking the competence of the contractor and designer; clients ensuring information is available and information and training.

131. The estimated cost per project of designers considering the risks with intended use and contractors planning, managing and monitoring their work for an under 5 worker non-notifiable project are £270 and £690 respectively⁶³. The remaining estimated costs are: £30 to £50 for clients ensuring there are arrangements to manage health and safety⁶⁴; £10 to 30 for clients checking the competence of the contractor and designer⁶⁵; £10 to

⁶² This cost has been calculated as follows: the number of hours expected for this duty to be performed has been multiplied by the client wage (adding 30% for non-wage labour costs).

⁶³ To estimate the cost per project of designers considering the risks with intended use and contractors plan, managing and monitoring their work it has been assumed that the cost of each task is proportional to the total project cost of each type of project.

The cost per under 5 worker non-notifiable project of considering the risks with intended use has been calculated as follows: the total value of designers has been multiplied by the proportion of total design costs that constitute the design stage, the expected increase in the cost of the design stage, the proportion of total project costs that are under 5 worker non-notifiable projects and the proportion of total construction costs spent designing places designed as places of work, divided by the number of under 5 worker projects non-notifiable per year.

The cost per under 5 worker non-notifiable project of contractors planning, managing and monitoring has been calculated as follows: the total value of contractors has been multiplied by the estimated proportion of contractor costs spent on planning, the expected increase in the cost of planning, managing and monitoring and the proportion of total project costs that are under 5 worker non-notifiable projects, divided by the number of under 5 worker non-notifiable projects per year.

⁶⁴ This cost has been calculated as follows: the average wage of a client (including 30% for non-wage labour costs) has been multiplied by the expected number of hours required to perform this duty.

⁶⁵ This cost has been calculated as follows: the average wage of a client (including 30% for non-wage labour costs) has been multiplied by the expected number of hours required to perform this duty.

£80 for clients ensuring information is available⁶⁶ and £0 to £40 for information and training⁶⁷.

132. There will also be cost savings from productivity improvements for under 5 worker non-notifiable projects that have been estimated at £450 to £990⁶⁸.

133. The net per project cost of the proposed Regulations is £30 to £710.

Notifiable Project Compliant With CDM 1994 But Not With CDM 2006

134. For a notifiable project compliant with CDM 1994 but not compliant with CDM 2006 there will be the following costs: designers considering risks with intended use, contractors planning, managing and monitoring and clients ensuring there are arrangements to manage health and safety.

135. The cost of these requirements for a notifiable project has been estimated at: £510 for designers considering risks with intended use; £1,280 for contractors planning, managing and monitoring; and £200 for clients ensuring there are arrangements to manage health and safety.

136. There will also be cost savings from a simplified procedure for clients to check the competence of co-ordinators, contractors and designers, and from productivity improvements. The cost savings from a simplified procedure have been estimated at £150 per project. The value of productivity improvements has been estimated at between £0 and £1,830⁶⁹.

137. The net cost per project of the proposed Regulations is £10 to £1,840.

⁶⁶ This cost has been calculated as follows: the average wage of a client (including 30% for non-wage labour costs) has been multiplied by the expected number of hours required to perform this duty.

⁶⁷ This cost has been calculated as follows: the average wage of a contractor (including 30% for non-wage labour costs) has been multiplied by the expected number of hours required to perform this duty and zero if there are no site specific hazards or 1 if there are site specific hazards. It has been assumed that there are no site-specific hazards for the lower bound but that there are site specific hazards for the upper bound.

⁶⁸ This cost savings has been calculated as follows: the total estimated cost saving has been multiplied by the proportion of total construction costs that are under 5 worker non-notifiable projects (value of under 5 worker non-notifiable projects divided by the value of all construction projects) and divided by the number of under 5 worker non-notifiable projects.

⁶⁹ The value of productivity improvements has been calculated using the same methodology as set out above for under 5 worker non-notifiable projects. The lower bound of productivity improvements has been set equal to zero because projects compliant with CDM 1994 are likely to experience smaller productivity improvements than projects not compliant with CDM 1994. It has not however been possible to estimate what the difference in productivity improvements will be between projects compliant with CDM 1994 and projects not compliant with CDM 1994.

Notifiable Project Not Compliant With CDM 1994 Or CDM 2006

138. For a notifiable project not compliant with CDM 1994 or CDM 2006 there will be the following costs: designers considering risks with intended use; contractors planning, managing and monitoring; clients ensuring there are arrangements to manage health and safety; clients checking the competence of the contractor and designer; clients ensuring information is available; information and training; worker involvement and employing a co-ordinator.

139. The cost of these requirements for a notifiable project has been estimated at: £510 for designers considering risks with intended use; £1,280 for contractors planning, managing and monitoring; £200 for clients ensuring there are arrangements to manage health and safety; £150 for clients checking the competence of the contractor and designer; £600 for clients ensuring information is available; £0 to £330 for information and training; £80 to £250 for worker involvement and £1,900 for employing a co-ordinator.

140. There will be cost savings from productivity improvements that have been estimated at between £830 and £1830.

141. The total per project cost of the proposed Regulations is £3,378 to £3,882.

Small Firms' Impact Test

Option 1: Do Nothing

142. No additional impacts are expected from this option.

Option 2: Revised Set Of Regulations Supported By A New ACoP or Guidance

143. The May 2004 National Audit Office report "*Health and Safety Executive: Improving health and safety in the construction industry*" said, "Ninety per cent of construction workers work for companies employing up to seven workers – small and medium sized firms and sole traders".

144. The importance of small firms to the construction industry has been recognised by including a representative from the Federation of Master Builders (FMB), a primary representative organisation for small firms in the construction industry, on a working group of the Construction Industry Advisory Committee that has been working with the Health and Safety Executive to develop the revised Regulations.

145. The FMB is satisfied that the new Regulations are not unduly burdensome and/or complex as to prejudice the interests of their members.

Competition Assessment

Option 1: Do Nothing

146. No additional impacts are expected from this option.

Option 2: Revised Set Of Regulations Supported By A New ACoP or Guidance

147. The construction industry is characterised by having a small number of very large firms while the vast majority of firms are in the small and medium sized category. No firm has a market share greater than ten per cent and the three largest firms together account for less than fifty per cent of the total market.

148. Revising existing Regulations will not alter the competitive make up of the construction industry, either in terms of benefiting some firms more than others, or firms of a particular size over those of a different size. Nor will the revised Regulations affect access to the market by increasing set up or ongoing costs unevenly.

149. While the industry is experiencing rapid technological change, the Regulations will not affect the ability of firms to compete in taking advantage of these changes or to compete in other areas such as price, quality, range or location.

Balance Of Costs And Benefits

Option 1: Do Nothing

150. There are no costs or benefits expected from this option.

Option 2: Revised Set Of Regulations Supported By A New ACoP or Guidance

151. The total cost of the proposed Regulations has been estimated to be between £1.0 and £2.8 billion, with quantified benefits estimated in the range of £1.96 to £5.9 billion (including reportable injuries, minor injuries and non-injury accidents) over the appraisal period, using the ECIA approach. The table below shows a simplified summary the costs and benefits.

Table 9: Option 2 Summary table.

	Present Value Over Appraisal Period, £Millions	Annualised Value £Millions
Total Benefit of Option 2	<u>1,957 to 5,918</u>	<u>227 to 688</u>
Total Net Cost of Option 2	1,009 to 2,846	117 to 330

152. For the purposes of making a judgement about the proportionality of the proposed Regulations, all business benefits should be treated as cost savings because only health and safety benefits, and wider societal benefits should receive a premium following the 'gross disproportionality' rule⁷⁰. This means that cost savings are negative costs rather than benefits, as benefits they would receive greater weight as gross disproportionality confers that costs should be proportional to benefits for aversion of risk to take place. Treating all cost savings as negative costs, the cost of the proposed Regulations is minus £639 to minus £152 million, so there are net positive health and safety benefits.

Uncertainties

*100% Compliance With Proposed Regulations*⁷¹

153. The costs above have been estimated under the assumption that there will be the expected level of compliance estimated by HSE inspectors and staff. If this assumption is dropped and 100% compliance with the proposed Regulations is assumed then the costs and benefits of the proposed Regulations will both increase.

154. In this section the estimated expected level of compliance has been replaced with 100%.

155. The costs and benefits of the proposed Regulations are set out in the tables below.

Table 9: Benefits Of Option 2 Assuming 100% Compliance

	Present Value of Benefits Over Appraisal Period, £M	Annualised Benefits £M
Safety Benefits		
ECIA Approach		
Reportable Injuries	2,899 to 3,290	337 to 382
All Injuries and Accidents	7,950 to 8,917	924 to 1,036
Influence Network Approach		
Reportable Injuries	1,822 to 1,856	212 to 216
All Injuries and Accidents	4,997 to 5,031	581 to 585
Injuries and Ill Health in the Workplace	Unquantified	Unquantified
Health Benefits	Unquantified	Unquantified
Other Benefits	0	0
Productivity Improvements	£11,620 to £12,782	£1,350 to £1,485

Table 10: Costs Of Option 2 Assuming 100% Compliance⁷²

	Present Value Over Appraisal Period, £M	Annualised Value £M
Additional Duties		
Familiarisation		
Contractors	£34.9 to £37.3	£4.1 to £4.3
Designers	£2.9	£0.3

⁷⁰ As set out by the Court of Appeal in its judgment in *Edwards v. National Coal Board*, [1949] 1 All ER 743)

⁷¹ The costs of the proposed regulation have been estimated using the same methodology as set out for each of the costs above. The difference is that the expected increase in the level of compliance is the level that will raise compliance to 100%.

⁷² These figures may not add up due to rounding. * figure less than £50,000.

	Present Value Over Appraisal Period, £M	Annualised Value £M
Clients	unquantified	unquantified
Designers: Consider Risks With Intended Use	£725.6 to £781.4	£84.3 to £90.8
Contractors: Plan, Manage And Monitor Their Work	£2,982.6 to £3,280.8	£346.5 to £381.2
Under 5 Worker Non-Notifiable Projects: Ensure Arrangements To Manage Health And Safety	£36.4 to £77.1	£4.2 to £9.0
Check The Competence Of Designers And Contractors	£18.2 to £38.6	£2.1 to £4.5
Ensuring Information Is Available	£18.9 to £118.2	£2.2 to £13.7
Information and Training	£2.8 to £12.1	£0.3 to £1.4
Over 4 Worker Non-Notifiable Projects and Notifiable Projects: Ensure Arrangements To Manage Health And Safety		
Notifiable Projects	£385.6 to £411.3	£44.8 to £47.8
Over 4 Worker Non-Notifiable Projects	£17.1 to £36.4	£2.0 to £4.2
Removal Of The Exemption From Civil Liability	0	0
HSE:		
Inspector Training	*	*
Evaluation	£0.1 to £0.2	*
Policy Development	£0.2 to £0.2	*
Existing Duties		
Designers: CDM Training	£42.8 to £76.3	£5.0 to £8.9
Over 4 Worker Non-Notifiable Projects and Notifiable Projects Co-ordinator		
Notifiable Projects	£1,713.2 to £1,958.0	£199.0 to £227.5
Over 4 Worker Non-Notifiable Projects	£1,709.3 to £1,816.1	£198.6 to £211.0
Check The Competence Of Planning Supervisor, Designers And Contractors		
Notifiable Projects	£ 250.6 to £269.9	£29.1 to £31.4
Over 4 Worker Non-Notifiable Projects	£34.3 to £36.4	£4.0 to £4.2
Ensuring Information Is Available		
Notifiable Projects	£1,079.6 to £1,156.8	£125.4 to £134.4
Over 4 Worker Non-Notifiable Projects	£205.6 to £218.5	£23.9 to £25.4
Information and Training		
Notifiable Projects	£119.6 to £128.1	£13.9 to £14.9
Over 4 Worker Non-Notifiable Projects	£22.8 to £24.2	£2.6 to £2.8
Worker Involvement		
Notifiable Projects	£160.1 to £512.4	£18.6 to £59.5
Over 4 Worker Non-Notifiable Projects	£56.9 to £181.5	£6.6 to £21.1
Cost Savings		
Checking Compliance		
Notifiable Projects	£115.7 to £135.0	£13.4 to £15.7
Over 4 Worker Non-Notifiable Projects	£6.4 to £ 8.6	£0.7 to £1.0
Total Net Cost	£9,498 to £11,030	£1,103 to £1,281

156. If costs are estimated to 100% compliance then net costs are in the range of £9.5 to £11 billion. Estimated benefits are in the range of £16.6 to £21.7 billion (including reportable injuries, minor injuries and non-injury accidents) using the ECIA approach. Therefore, with 100% compliance the benefits are estimated to be larger than the costs.

Health and Safety Benefit Uncertainties

157. The estimated health and safety benefits are uncertain. It is unlikely that they will be smaller than the magnitudes estimated because health benefits have not been quantified. Additionally, long-term benefits flowing from designers considering the risks with the intended use of the building have not been quantified. Commercial benefits are likely to arise from a reduction in future expenditure, (in terms of time and money), by workplace (e.g. factories, office, schools) owners and occupiers because health and safety issues are tackled at the design stage, rather than alterations being required after occupation. It can be very expensive to modify unsafe traffic routes, slippery floor surfaces, poor access to lights for cleaning and maintenance purposes if such issues are not addressed at the design stage. Potential litigation costs arising from accidents or ill-health linked to such features should also be reduced. The benefits from both of these could be substantial.

Productivity Increases

158. It has been estimated that the proposed Regulations could reduce project costs by 3%. If the reduction in project costs matched the 'Demonstrations' with a reduction of 6% then the value of the productivity increases would be £2.3 to £7.0 billion assuming expected compliance and £23.2 to £25.6 billion assuming 100% compliance, over the appraisal period. The cost savings from productivity increases would outweigh the estimated costs of the proposed Regulations.

Designers Consider Risks With Intended Use

159. There is uncertainty surrounding the estimated cost of this requirement. It has been estimated that the cost of the design stage will increase by 3 to 5% and that the cost of additional cost of this requirement will fall by 20% each year of the appraisal period as designers become more experienced with performing this duty. If however, the cost of this requirement remains constant for each year of the appraisal period, then the cost of this duty will be £236 to £354 million assuming expected compliance and between £1,535 and £1,653 million assuming 100% compliance, over the appraisal period.

*Client Familiarisation Costs*⁷³

160. It has not been possible to estimate the costs to clients of familiarisation with the proposed Regulations because the number of clients per year is unknown. It is known that 65%⁷⁴ of clients are repeat clients per year (assumed to have an average of 5 projects per year) and the remaining 35% only have one project, of these only 70% are

⁷³ Client familiarisation costs in year one have been calculated as follows: the number of projects has been multiplied by the assumed number of clients, the number of hours familiarisation is expected to take and the average client wage (adding 30% for non-wage labour costs). The costs in year two onwards, are the costs in the previous year multiplied by the proportion of all clients who are new clients per year.

commercial clients. If familiarisation takes 8 hours, clients receive the average client wage, and that there is 100% compliance with this duty, the present value cost of familiarisation in this case is £56.7million over the appraisal period.

Other Cost Uncertainties

161. There are a number of uncertainties in the costs that have been estimated. To reflect these uncertainties ranges have been used where appropriate.

Enforcement And Sanctions

162. Depending on the type of construction activity involved, the Regulations will be enforced by either the Health and Safety Executive or Local Authorities.

163. Compliance is expected to be higher, due to many of the requirements being easier to understand for duty holders. Many of the requirements are already being met within the industry and there is the capacity to share this existing compliant practice as well as good practice.

164. Inspectors will identify non-compliance by responding to queries raised, investigating accidents and incidents, and routine checks. Inspectors may offer duty holders information and advice. Where appropriate, enforcement action may be taken in accordance with the HSC Enforcement Policy Statement.

165. The Health and Safety at Work etc Act 1974, section 33 (as amended) sets out the offences and maximum penalties under health and safety legislation.

166. The impact of the new Regulations will be assessed over time by monitoring reports of fatalities, injuries and near misses, which are submitted by duty holders.

Arrangements For Monitoring And Evaluation

167. HSE has commissioned research, currently underway, to establish baseline data for future evaluation of the Regulations. There will also be post-implementation monitoring of the Regulations, to determine impact in the light of ongoing feedback (Infoline enquiries, operational and stakeholder feedback etc); and formal evaluation is expected to take place around 5 years after implementation.

Contact Point:

Cathy Kerby, HSE Construction Policy, 5 SW, Rose Court, London, SE1 9HS

Tel: 020 7556 2106 Fax: 020 7556 2209 E-mail: cathy.kerby@hse.gsi.gov.uk

Date: 17 February 2005

⁷⁴ From BOMEL RIDDOR Research Report RR139.