

Construction (Design And Management) Regulations 2007

Regulatory Impact Assessment (Full)

1. Purpose And Intended Effect

1.1. Issue

1. The Construction (Design and Management) (CDM) Regulations 1994 address the health and safety requirements of temporary and mobile construction projects - including the way work is planned, organised and managed. The Regulations implement requirements of Council Directive 92/57/EEC (the Temporary or Mobile Construction Sites (TMCS) Directive). Following their implementation in 1995, concerns were raised that their undue complexity, coupled with the bureaucratic approach adopted by many duty holders, 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.
2. The Construction (Health, Safety and Welfare) Regulations 1996 (CHSW) also implement requirements of the TMCS Directive, namely, those relating to specific health and safety precautions and welfare provision on sites. These Regulations were amended by the Work at Height Regulations 2005, and the opportunity has been taken during the revision of CDM to consolidate the CDM and CHSW Regulations into a single new set of Regulations. Because the incorporation of the CHSW requirements has been done without essential change to them it has been assumed that no additional costs or benefits arise and consequently this assessment confines itself to the CDM aspect.

1.2. Objectives

3. The revised Regulations, together with the supporting Approved Code of Practice (ACoP), have been developed in line with Better Regulation principles and 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 duty holders assess competence.
4. In seeking to achieve the above objectives account has been taken, throughout development of the proposals, of the differing needs and experience levels of all those involved in construction projects. A conscious effort has also been made to reduce administrative burdens on everyone involved. The overall intention is that, ultimately, compliance will not only increase (because people find it easier to understand what they (and others) need to do) – but will be achieved with more focus and less wasted effort – resulting in business, as well as health and safety, benefits.

1.3. Risk assessment

5. 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 1996/97 to 2004/05p¹

	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05p
Employees	66	58	47	61	73	60	56	52	56
Self-employed	24	22	18	20	32	20	14	19	15
Members of the public	3	6	3	6	8	5	5	4	8
Total fatal injuries	93	86	68	87	113	85	75	75	79

¹ Reported to all enforcing authorities. Figures for 2004/05 are provisional. These figures do not account for the known under-reporting of incidents to HSE.

Table 2: Number of major injuries to workers and non-fatal injuries to members of the public 1996/97 to 2004/04p²

	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05p
Employees	3 227	3 860	4 289	4 386	4 303	4 055	4 031	3 978	3 760
Self-employed	827	466	367	363	405	540	690	750	726
Total major injuries to workers	4 054	4 326	4 656	4 749	4 708	4 595	4 721	4 728	4 486
Members of the public	405	339	378	403	316	381	263	180	201
Total major injuries	4 459	4 665	5 034	5 152	5 024	4 976	4 984	4 908	4 687

Table 3: Number of over 3-day injuries to workers 1996/97 to 2004/05p

	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05p
Employees	8 637	9 756	9 195	10 159	9 367	9 100	8 949	8 256	7 509
Self-employed	1 029	509	381	345	429	595	629	739	741
Total over-3-day injuries to workers	9 666	10 265	9 576	10 504	9 796	9 695	9 578	8 995	8 250

6. 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 2004/05p

	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05p
Falls from a height ³	56%	58%	60%	52%	44%	46%	47%	55%	39%
Struck by moving vehicle	11%	6%	12%	6%	16%	14%	7%	14%	7%
Struck by moving/falling object	12%	15%	12%	21%	10%	16%	16%	10%	18%
Trapped by collapsing/overturning	7%	5%	5%	2%	17%	5%	7%	4%	18%
Other	14%	16%	11%	19%	12%	19%	23%	17%	17%
Total fatal injuries to workers	90	80	65	81	105	80	70	71	71

² Non-fatal injury statistics before 1996/97 cannot be directly compared with earlier years because the system of reporting injuries changed in 1996 (RIDDDOR 1995)

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

Table 5: Percentage of major injuries to employees by kind of accident 1996/97 to 2004/05p

	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05p
Falls from a height ³	35%	37%	37%	36%	37%	30%	30%	28%	28%
Slips, trips or falls, same level	19%	19%	20%	21%	21%	26%	26%	27%	25%
Struck by moving vehicle	3%	2%	3%	2%	2%	2%	2%	2%	2%
Struck by moving/falling object	21%	20%	18%	18%	18%	18%	17%	16%	16%
Injured handling/lifting/carrying	8%	9%	9%	10%	8%	10%	11%	14%	15%
Other	14%	13%	13%	13%	14%	14%	14%	14%	13%
Total major injuries to employees	3 227	3 860	4 289	4 386	4 303	4 055	4 031	3 978	3 760

Table 6: Percentage of over-3-day injuries to employees by kind of accident 1996/97 to 2004/05p

	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05p
Falls from a height ³	12%	12%	14%	14%	14%	11%	9%	10%	9%
Slips, trips or falls, same level	17%	17%	17%	18%	19%	22%	23%	22%	22%
Struck by moving vehicle	1%	1%	1%	2%	1%	1%	1%	1%	1%
Struck by moving/falling object	19%	18%	18%	19%	18%	16%	15%	15%	16%
Injured handling/lifting/carrying	36%	36%	35%	34%	33%	35%	36%	37%	38%
Other	15%	16%	15%	13%	14%	15%	16%	15%	14%
Total over-3-day injuries to employees	8 637	9 756	9 195	10 159	9 367	9 100	8 949	8 256	7 509

1.3.1. Total Cost of Injuries In The Construction Sector

7. 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 2004/05 has been used to estimate the average annual cost of each type of injury over the ten year appraisal period. The number of non-fatal injuries reported for workers under RIDDOR has been adjusted for under reporting using a reporting rate of 48%, estimated using the Labour Force Survey (LFS).
8. 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 the same as for employees.

9. The present value cost of reportable injuries in the construction industry is £10.0 billion to £10.2 billion over the appraisal period.
10. 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.
11. 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).
12. The cost of minor injuries in the construction sector is £216 million over the appraisal period.
13. In addition to incidents which result in injuries and ill-health, health and safety failures also lead to non-injury incidents. The number of these incidents is not known, but it has been estimated to be a multiple of the total number of injury incidents. For this document, that multiple is assumed to be between 20 and 40. The cost of each non-injury incident is assumed to be approximately £180. 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 between £405.8 million and £811.5 million over the appraisal period.
14. The present value cost of injuries and ill-health, including non-injury accidents in the construction sector is £13.8 billion to £17.7 billion over the appraisal period.
15. 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.

2. Options

2.1. Option 1: Do Nothing

16. The TMCS Directive must be implemented in UK domestic legislation, and this was done mainly 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 they were not being as effective as intended, and that these issues needed to be resolved.

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

17. The number of accidents that occur in the construction industry remains disproportionately high, as do the associated costs, considering the proportion of work force employed, as outlined in the Risk Assessment section.
18. The Do Nothing Option is therefore not a viable option in terms of health and safety, neither is it economically viable.

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

19. 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.
20. 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.
21. The Health and Safety Commission (HSC) and its Construction Industry Advisory Committee (CONIAC) concluded that the best way to deliver this change would be to revise the Regulations and supporting ACoP. This view 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.
22. Finally, and with a view to further improvement, CONIAC agreed to take the opportunity to incorporate the requirements of the Construction (Health, Safety and Welfare) Regulations 1996 into the new Regulations. This would bring all the key construction-specific provisions together in a single instrument.

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

23. 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 because Option 3 is unlikely to achieve the required effects it is not recommended.
24. The costs and benefits of this option are intertwined with those for the CDM Regulations 1994. The 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. As few changes would be required to be made by industry, the costs of this option would also be lower than the costs of Option 2. However, there would still be significant familiarisation costs and some behavioural changes would be induced. We estimate that these costs would amount to 40% of the costs 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:

Table 7: Summary of costs and benefits of option 3

	Present Value Over Appraisal Period, (millions)	Annualised Value (millions)	Percentage of Option 2
Benefit of Option 3	£27 to £151	£3 to £18	5% to 10%
Cost of Option 3	£852 to £1,870 ⁵	£99 to £217	40%

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

3. Information Sources and Background Assumptions

26. 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,

⁵ The net costs are assumed to exclude the cost savings outlined under Option 2 as it is not thought that these are likely to materialise under this option. However, if these cost savings are included, the average costs are still estimated to outweigh the average benefits.

*'Improving health and safety in construction'*⁶, Experian/CITB research, the Department for Transport's Highways Economic Note no. 1 2004⁷, *'The costs to Britain of workplace accidents and work-related ill health'*⁸, and other sources within HSE.

27. 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%.
28. Costs and benefits have been calculated over a ten-year appraisal period from 2007 to 2016 and are given in 2004/05 prices.
29. 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 accidents⁹.
30. 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). Hourly wage rates have been taken from the Annual Survey of Hours and Earnings. The wage rates used are £22.52 for contractors, £24.78 for clients, and £23.73 for designers.¹⁰
31. 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.
32. The definition of notifiable projects will remain unchanged and will be the single threshold for appointments and plans required under the proposed Regulations. It is not clear exactly how many projects will fall within the definition of a notifiable project. For the purpose of estimation, we have taken the same line as in the BOMEL study¹¹, where two scenarios have been used: (1) where projects with a value under £50,000 are non-notifiable; and (2) where projects with a value under £200,000 are non-notifiable.

⁶ 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>

⁷ http://www.dft.gov.uk/stellent/groups/dft_rdsafety/documents/page/dft_rdsafety_610642.hcsp

⁸ HSE 1999, 'The costs to Britain of workplace accidents and work-related ill health', ISBN 0-7176-1709-2.

⁹ Fatal injuries £1,399,252, major injuries £37,175, over three day injuries £5,288, minor injuries £321, non-injury accidents £179 and incidences of ill-health, £7,372. Unit costs are in 2004/05 prices.

¹⁰ Contractors: SIC code 1122 (Managers in Construction); Designers: average of SIC codes 2431 and 2126 (Architects, Design and Development engineers); Clients: average of SIC codes 112 and 1121 (Production Managers, Production, works and maintenance managers). These wages are increase by 30% to account for non-wage labour costs.

¹¹ [Insert appropriate citation]

4. Equity And Fairness

33. 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.
34. 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.

5. Atypical workers

35. 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."
36. 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.

6. Benefits

6.1. Health And Safety Benefits

6.1.1. Option 1: Do Nothing

37. There are no additional benefits from this option.

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

6.1.2.1. *Health and Safety Benefits To Construction Workers*

38. 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 construction sector as a whole, and (2) an Influence Network approach. The approaches are explained in more detail below.

Comparison with the Engineering Construction Industry Association's Injury Rates

39. The ECIA is known to follow best practice and has injury rates lower than the construction sector as a whole. If, as a result of the Regulations, performance improves, 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. It is assumed the same reduction would occur for work-related ill-health.
40. Using data on all injuries reported under RIDDOR, the injury rate of the construction sector as a whole was 2.16 times worse than ECIA projects in 2003 and 2.20 times worse in 2004. Hence, if the construction sector injury rate falls to the same level as the ECIA injury rate (a fall of between 54% and 55%), the present value health and safety benefit of the proposed Regulations is £5.4 billion to £5.5 billion (reportable injuries and ill-health only) over the appraisal period. If non-injury accidents are included, the present value benefit is £7.4 billion to £9.7 billion over the appraisal period¹².
41. The estimates above have been calculated on the basis of 100% compliance. To account for expected levels of 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 work.¹³ 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 £536 million to

¹² RIDDOR Injuries and Injury Rates for ECIA

Year	Number of Employees	RIDDOR Injuries	RIDDOR rate per 100000
2003	35 649	184	516.1
2004	30268	134	442.7

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

Year	Number of Employees	RIDDOR Injuries	RIDDOR rate per 100000
2003	1 089 800	12 150	1,114.9
2004	1 146 732	11 191	975.9

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. The expected overall level of compliance is expected to increase from 50% - 55% to 55% - 60%.

£1.5 billion (reportable injuries and ill-health only) or £0.7 billion to £2.6 billion (reportable injuries, ill-health and non-injury accidents)¹⁴.

42. 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 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

43. 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.
44. 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.
45. 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 approximately £3.4 billion (reportable injuries and ill-health only) or £4.6 billion (including minor injuries and non-injury accidents) over the appraisal period.
46. 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

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.

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 In this case, the expected overall level of compliance is expected to increase from 50% - 55% to 55% - 60%.

number of other duties set out in them. Under this assumption the expected safety benefit, given expected compliance, is £337 million to £935 million (reportable injuries and ill-health only) or £465 million to £1.6 billion (reportable injuries, ill-health, minor injuries and non-injury accidents).¹⁹

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

47. 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.

6.1.2.3 Reduction in number of projects subject to requirements for appointments and preparation of a Health and Safety Plan

48. A number of the requirements of the existing CDM Regulations (eg to make appointments and to draw up a Health and Safety Plan) are disapplied if a construction project has always fewer than 5 workers on site and is not notifiable. Under the proposed Regulations the under 5 worker condition will be removed and consequently fewer projects will be subject to the requirements for appointments and preparation of a health and safety plan. However, the number will be small and we have discounted it for the purposes of this assessment.

6.2. Total Benefits

6.2.1. Option 1: Do Nothing

49. No benefits are expected for option 1.

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.

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

Table 8: Benefits Of Option 2

Safety Benefits	Present Value of Benefits Over Appraisal Period (millions)	Annualised Benefits (millions)
<i>Influence Network Approach</i>	£337 to £935	£39 to £109
<i>ECIA Approach</i>	£536 to £1,513	£62 to £176
<i>ECIA Approach, including non-injury accidents</i>	£740 to £2,645	£86 to £307

7. Costs

7.1. Business Sectors Affected

50. 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.

7.2. Total Compliance Costs To Business

7.2.1. Option 1: Do Nothing

51. There are no additional costs from this option.

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

52. There are three sets of costs resulting from the proposed Regulations: (1) familiarisation costs; (2) the costs of compliance with the enhanced duties under CDM 2007; and (3) the costs of improved compliance with existing duties under CDM 1994 which have been carried forward into the new Regulations.

7.2.2.1. Cost of Compliance with Enhanced Duties

*Familiarisation costs*²⁰

53. There are four main groups that will be required to familiarise themselves with the proposed Regulations: contractors, designers, clients and co-ordinators.
54. 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 year²¹; (5) the estimated expected level of compliance is 60% to 70%²²; and (6) it has been estimated that 60% to 70% 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 contractors is estimated at £17.1 million to £26.2 million over the appraisal period.
55. Familiarisation costs for designers have been estimated with the following information: (1) there are 225,000 designers; (2) it has been assumed that familiarisation will take 6 hours for each designer who (3) receives the average designer wage; (4) it has been estimated that the turnover of designers is 5% per year; (5) the estimated expected level of compliance is 50%; and (6) it has been estimated that 50% of new designers 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 £16.0 million over the appraisal period.
56. 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.
57. Familiarisation costs for co-ordinators ... [numbers of co-ordinators say: 5000 members of APS, 300 members of IPS plus about 10% to cover persons not members of either organisation = approx 6000? 20% of all co-ords are designers so don't double count]

This is an implementation cost.

²⁰ 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).

²¹ Source: DTI/ Small Business Service. Estimate for 2002.

²² The current compliance level is a best-estimate based on HSE Inspectors' experiences and industry sources.

Cost of compliance with Enhanced Duties under CDM 2007

58. HSE commissioned research to identify the likely costs to business which would accrue as a result of the introduction of new duties under CDM 2007. This research sought to determine the likely extra costs to stakeholders from CDM. The unit cost data from this research have been combined with data on the distribution of construction projects by value band. This distribution is based on data from the "Construction Statistics Annual 2005", published by DTI, together with an estimate of the total number of projects made by HSE. This distribution also takes into account projects which fall into the "less than £25,000" band, which are not counted in the DTI data. The following three tables give the combined results. The figures are the total cost for one year, assuming 100% compliance.²³

Table 9: Annual Costs to Clients (regulations 9 and 20)²⁴

Value Band (thousands)	Proportion of projects in band	Unit Cost	Number of projects in band	Total Cost (millions)
<£200	62%	£170	310000	£52.7
£200 - £500	17%	£190	83000	£15.6
£500 - £750	6%	£500	28000	£13.8
£750 - £1000	4%	£670	18000	£11.8
>£1000	12%	£1,870	62000	£115.4

59. The total of these costs comes to £209.3 million. Some of the projects included in these data will not meet the notification criteria under CDM. If we assume that this cut-off point is at a project value of £50,000 then the total becomes £182.7 million and if the cut-off is at £200,000 then the total is £156.6 million. The above costs do not include the cost of engaging a co-ordinator when this is required by the Regulations. This is on the basis that such a cost is not a new cost under CDM 2007 since CDM 94 required appointment of a Planning Supervisor in the same circumstances.

Table 10: Annual Costs to Designers of enhanced duty (regulation 11)

Value Band (thousands)	Proportion of projects in band	Unit Cost	Number of projects in band	Total Cost (millions)
<50	31%	£10	156,000	£1.4
50 - 250	35%	£190	173,000	£33.5

²³ Certain value bands in these tables have been grouped together as the HSE research and DTI statistics do not use the same value ranges.

²⁴ Regulation 20 states that the co-ordinator must assist the client in certain ways. As the co-ordinator is employed by the client, we assume that this cost falls directly on the client.

250 - 500	13%	£140	64,000	£9.0
500 - 750	6%	£680	28,000	£19.0
750 - 1000	4%	£140	18,000	£2.6
>1000	12%	£1,350	62,000	£82.9

60. The total of these costs come to £148.5 million. If the notification cut-off point is at £50,000 then the total is £147.1 million and if the cut-off is at £200,000 then the total becomes £117.2 million.

Table 11: Annual Costs to Architects plus Civil Engineers (regulation 11)

Value Band (thousands)	Proportion of projects in band	Unit Cost	Number of projects in band	Total Cost (millions)
<500	78.55%	£260	393,000	£102.9
500 - 1000	9.13%	£700	46,000	£32.1
>1000	12.32%	£1,530	62,000	£94.5

61. The total of these costs comes to £229.5 million. If the cut-off point for notification is assumed to be at £50,000 then the total becomes £188.6 million, and if the cut-off is at £200,000 then the total is £148.3.

62. We assume that each project includes a designer, architect and civil engineer. Small projects may not include all three individuals, but these are excluded when considering the notification cut-off point. Large projects, such as infrastructure projects, may also not involve architects and other designers, but they are likely to involve more work for the civil engineers, so this is assumed to not affect the balance of costs. The total for the sum of tables 10 and 11 is £377.9 million. If the cut-off point is estimated as £50,000 then the total is £335.6 million and if it is estimated as £200,000 then the total becomes £265.5 million.

63. As noted above, tables 9 to 11 are one-year costs, assuming 100% compliance. We know that likely levels of compliance will not reach this level of compliance. In order to take account of this, we present a range of options where the compliance level varies between 45% and 55%. It was identified in the research undertaken to inform tables 9 to 11 that some costs may be over-estimated where respondents incorporated duties which are part of regulations other than CDM. To account for this the totals have been reduced by between 10% and 20%. The ranges of possibilities generated by these estimates are presented in table 12 as present values over the ten-year appraisal period and as annualised figures.

Table 12: Total Present Cost of Enhanced Duties

	Assumptions	Present Value (billions)	Annualised (billions)
Excluding projects under £50,000	Low	£2.2	£0.3
	High	£3.1	£0.4
Excluding projects under £200,000	Low	£1.7	£0.2
	High	£2.4	£0.3

Removal Of The Exemption From Civil Liability

64. 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.

7.2.2.2. Cost of Improved Compliance with Existing Duties under CDM 1994

65. 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 1994. It should be noted that these costs have previously been estimated in the Cost Benefit Analysis for CDM 1994.

CDM Training for Designers²⁵

66. The cost of designers receiving training to become CDM competent has been estimated using the following information: (1) there are 225,000 designers²⁶; (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 £50²⁷ and £230²⁸ 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 £3.7 million to £13.0 million over the appraisal period.

This is a policy cost.

Planning Supervisor/Co-ordinator²⁹

67. It is proposed that co-ordinators will:

- 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.

²⁵ 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.

²⁶ Source: Experian/CITB research.

²⁷ Source: BPS Consulting Website.

²⁸ Source: SERCO Website.

²⁹ 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.

68. This role is the successor to that of the Planning Supervisor and is required for notifiable projects. Planning Supervisors were estimated to cost 1.1% of project costs in the Evaluation of the Construction (Design and Management) Regulations 1994.³⁰ In addition, the following information has been used to estimate costs: (1) it has been estimated that there is currently between 50% and 55% compliance with CDM and that this will increase to between 60% and 65%; (2) it has been estimated that clients take 2.5 hours to appoint a co-ordinator. The present value cost of co-ordinators, if we assume the notifiable project cut-off point is at £50,000, is between £257.6 million and £772.7 million. If we assume the cut-off point is at £200,000, the preset value is between £339.7 million and £1,019.0 million.

These are implementation costs.

*Client to Check The Competence Of Co-ordinators, Designers And Contractors*³¹

69. The cost to clients of checking the competence of co-ordinators, designers and contractors has been estimated using the following information (1) it has been estimated that there is 20% to 30% compliance with this requirement increasing to between 40% and 50%; and (2) it has been estimated that it takes 4 hours for clients to perform this task. The present value cost of clients checking competence is estimated at £26.7 million to £80.0 million over the appraisal period if we assume the notifiable project cut-off point is at £50,000 and £14.7 million to £44.2 million if we assume £200,000.

These are policy costs.

*Client to Ensure Information Is Available*³²

70. 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 25% compliance with this requirement (increasing to between 35% and 45%); and (2) it has been estimated that it takes 18 hours for clients to perform this task. The present value cost is estimated at £120.0 to £359.9 million over the appraisal period, if the notifiable cut-off point is at £50,000 and between £66.3 million and £199.0 million if the cut-off point is at £200,000.

These are policy costs.

³⁰ http://www.hse.gov.uk/research/crr_hm/1997/crr97158.htm

³¹ 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.

³² 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.

*Information and Training Costs*³³

71. The cost to contractors of providing information and training has been estimated using the following information: (1) it has been estimated that there is 20% to 25% compliance with this requirement (increasing to between 30% to 35%); (2) it has been estimated that it takes 12 hours for contractors to perform this task; and (3) it has been estimated that 20% of notifiable projects require information and training. The present value cost to contractors of information and training is estimated at £8.8 million to £26.4 million over the appraisal period if the cut-off point for notifiable projects is £50,000 and £4.9 million to £14.6 million if the cut-off point is £200,000.

These are policy costs.

*Worker Involvement*³⁴

72. Under this duty, Principal Contractors are required to consult with the workforce and their representatives. The cost to Principal Contractors of this duty has been estimated using the following information: (1) it has been estimated that there is 15% to 20% compliance with this duty on notifiable projects (increasing to between 25% to 30%) and (2) it has been estimated that it takes 8 hours to perform this task. The present value cost to Principal Contractors is estimated at £29.3 million to £88.0 million if we assume the cut-off point for a notifiable project is £50,000 and between £16.2 million and £48.7 million if we assume the cut-off is at £200,000.

This is a policy cost.

Other Duties

73. No additional costs are expected for appointing a Principal Contractor because compliance is estimated at 100%. No additional costs are expected for the following duties to be performed: provision for health and safety and notification of a project.

³³ 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.

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 contractor wage (adding 30% for non-wage labour costs) and the expected increase in the level of compliance with this duty.

7.3. Cost Savings

7.3.1. Productivity Improvements³⁵

74. 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;
- measurement of improvements based on clear benchmarks; and
- involving the whole supply chain in the whole process at the earliest possible stage, preferably design.

75. 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.

76. If the whole industry achieved the same results as the 'Demonstrations' then project costs could potentially fall by 6%³⁶. 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 £0.9 billion to £2.7 billion over the appraisal period if we assume that the cut-off point for notification is £50,000 and between £0.7 billion and £2.1 billion if the cut-off point is assumed at £200,000.

³⁵ 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.

³⁶ <http://www.constructingexcellence.org.uk/productivity/demonstration.jsp?level=0>

7.3.2. Incorporation of the requirements of the Construction (Health, Safety and Welfare) Regulations 1996 and amendment to the Management of Health and Safety at Work Regulations 1999

77. The requirements of the Construction (Health, Safety and Welfare) Regulations 1996 have been incorporated into Part 4 of the Regulations essentially without change and, consequently, no additional health and safety benefits are expected. There may be some cost savings from this rationalisation, but these have not been quantified.

7.3.3. Checking and Demonstrating Competence³⁷

78. HSE commissioned research to develop guidelines for the selection of competent co-ordinators, designers and contractors. The research took account of current good practice and existing schemes for assessing competency and ability to allocate adequate resource. HSE has drawn on the findings of the research to develop detailed guidance for clients and others on how to assess the competence and adequacy of resource of those they propose to appoint or engage. This new guidance has been included in the new CDM Approved Code of Practice. It is hoped that it will be helpful to all duty holders and particularly to one-off or occasional clients and SMEs (Small and Medium-sized Enterprises).

79. As a result of this new guidance 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 minimising the number of inappropriate applications and enabling easier weeding out by clients). The new guidelines place the onus on the potential appointee to gather and provide supporting evidence for the client and should reap dividends for both parties in reduced paperwork and costs.

80. The cost benefit analysis for CDM 1994 estimated that checking competence would take clients 8 hours. It has been estimated that under the proposed Regulations this should fall by half for both types of project. With compliance estimated at 20% to 30%³⁸, the present value cost saving for clients is estimated at between £53.3 million and £80.0 million where the notification cut-off is assumed at £50,000 and between £29.5 million and £44.2 million if it is £200,000.

81. By simplifying the arrangements for demonstrating competence, it is assumed that this process will be simpler and quicker for contractors and designers when tendering for projects. We assume that for each construction project there are, on average, between two and six tenders from designers and contractors. It is assumed that the time taken to prepare the competence demonstration falls from two hours to five minutes per tender and that compliance with the requirement is between 20% and 30%.

³⁷ 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.

³⁸ The current compliance level is a best-estimate based on HSE Inspectors' experiences.

82. The present value of the cost saving to designers is between £53.8 million and £242.3 million if the cut-off point for notification is at £50,000 and between £29.8 and £134.0 million if the cut-off is at £200,000.
83. The present value cost saving to contractors is between £51.1 million and £229.9 million if the cut-off is at £50,000 and between £28.3 million and £127.1 million if it is at £200,000.

7.4. Costs to HSE

7.4.1. Option 1: Do Nothing

84. There are no additional costs from this option.

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

*Inspector Training*³⁹

85. 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 £63,000.

This is an implementation cost.

7.5. Total Costs To Society

7.5.1. Option 1: Do Nothing

86. There are no additional costs from this option.

³⁹ 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).

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

Table 13: Total Costs Of Option 2⁴⁰

	Over Appraisal Period Present Value (millions)		Annualised (millions)	
	Low	High	Low	High
Familiarisation	£33.1	£42.2	£3.8	£4.9
Costs of Enhanced Duties	£1,738.7	£3,072.5	£202.0	£356.9
<i>Costs from increased compliance</i>				
Designer Training	£3.7	£13.0	£0.4	£1.5
Co-ordinator Costs	£257.6	£1,019.0	£29.9	£118.4
Competence Checks	£14.7	£80.0	£1.7	£9.3
Client/Information	£66.3	£359.9	£7.7	£41.8
Worker Involvement	£16.2	£88.0	£1.9	£10.2
<i>Cost Savings</i>				
Productivity Changes	-£2,711.1	-£689.9	-£315.0	-£80.2
Competence Checks	-£552.2	-£87.5	-£64.1	-£10.2
Costs to HSE	£0.1	£0.1	£0.01	£0.01
Total	-£1,132.7	£3,897.2	-£131.6	£452.8

Note: Negative values indicate cost savings

7.6. Compliance Costs For A 'Typical' Business

7.6.1. Option 1: Do Nothing

87. No additional costs are expected from this option.

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

88. 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, notifiable, projects have been presented for a project valued between £50,000 and £100,000. Nearly fifty percent of all projects are assumed to fall into this category.

⁴⁰ These figures may not add up due to rounding. Negative values indicate cost savings.

89. 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.

7.6.3. Business Specific Costs

Clients

90. 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.

The present value cost of familiarisation has been estimated at £180⁴¹.

91. 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

92. 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.

93. The present value cost of familiarisation has been estimated at £198.

94. 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

95. 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.

96. The present value cost of familiarisation has been estimated at £142.

97. The present value of the training cost to a designer is estimated to be between £240 and £420. This is made up of the time spent on a training course and the cost of the course itself.⁴²

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

⁴¹ 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.

⁴² We assume a training course takes eight hours and the training course costs between £50 and £230.

7.6.4. Project Specific Costs

Project Currently Following Best Practice

99. 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. This cost saving is estimated at £90.
100. There will also be a cost saving for designers and contractors as producing the demonstration of competence will take significantly less of their time. We assume that, on average, designers and contractors have to submit between two and six tenders before successfully being engaged on a project. The cost saving from the streamlined tendering process are estimated at between £91 and £273 for designers and between £86 and £259 for contractors.

Project Compliant With CDM 1994 But Not With CDM 2007

101. For a project compliant with CDM 1994 but not compliant with CDM 2007 there will be the following costs: clients to ensure there are suitable arrangements in place to manage health and safety, and designers to consider risks with intended use.
102. The cost of these requirements for a has been in HSE research at: £228 for designers considering risks with intended use, and £170 for clients ensuring there are arrangements to manage health and safety.
103. There will also be cost savings from a simplified procedure for clients to check the competence of co-ordinators, contractors and designers, for contractors and designers to demonstrate competence and from productivity improvements. The competence-check cost savings are estimated at £90 for clients, and at between £91 and £273 for designers and between £86 and £259 for contractors.
104. If construction projects experience a 3% increase in productivity then for a project valued at £75,000 the cost savings are £2,250.

Project not Compliant With CDM 1994 or CDM 2007

105. HSE commissioned research to identify the total current costs of CDM 1994. This research estimated that the total cost to clients for a project of value between £50,000 and £100,000 are £1,540. For designers, the costs are estimated at £1,040 and for contractors, £2,290. In addition to these costs are the costs, and cost savings, outlined above for a project currently only compliant with CDM 1994.

8. Small Firms' Impact Test

8.1. Option 1: Do Nothing

106. No additional impacts are expected from this option.

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

107. 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".
108. 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. The FMB is satisfied that the new Regulations are not unduly burdensome and/or complex as to prejudice the interests of their members. HSC's Small Business Trade Association Forum has also been regularly apprised.

9. Competition Assessment

9.1. Option 1: Do Nothing

109. No additional impacts are expected from this option.

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

110. 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 thirty per cent of the total market.
111. 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.
112. 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.

10. Balance Of Costs And Benefits

10.1. Option 1: Do Nothing

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

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

114. Table 15 gives a summary of the estimated costs and benefits associated with option 2.

Table 14: Option 2 Summary table of Benefits and Costs

	Over Appraisal Period		Annualised Values (billions)	
	Net Present Value (billions)		Low	High
	Low	High	Low	High
Total benefits of option 2 (ECIA approach)	£0.5	£1.5	£0.1	£0.2
Total benefits of option 2 (ECIA approach, including non-injury accidents)	£0.7	£2.6	£0.1	£0.3
Total net costs of option 2	-£1.1	£3.9	-£0.1	£0.5

Note: Negative values indicate cost savings

11. Uncertainties

100% Compliance With Proposed Regulations⁴³

115. 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.
116. The costs and benefits of the proposed Regulations under 100% compliance are set out in the tables below.

⁴³ 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%.

Table 15: Benefits Of Option 2 Assuming 100% Compliance

Safety Benefits	Present Value of Benefits Over Appraisal Period (millions)	Annualised Benefits (millions)
<i>Influence Network Approach</i>	£3,367 to £3,427	£391 to £398
<i>ECIA Approach</i>	£5,357 to £5,547	£622 to £644
<i>ECIA Approach, including non-injury accidents</i>	£7,397 to £9,697	£859 to £1,127

Table 16: Costs Of Option 2 Assuming 100% Compliance

	Present Value of Costs Over Appraisal Period (millions)		Annualised Costs (millions)	
	Low	High	Low	High
Familiarisation	£80.0	£82.9	£9.3	£9.6
Costs of Enhanced Duties	£3,863.8	£5,586.3	£448.9	£649.0
<i>Costs from increased compliance</i>				
Designer Training	£44.7	£78.2	£5.2	£9.1
Co-ordinator Costs	£2,318.2	£3,396.8	£269.3	£394.6
Competence Checks	£27.1	£279.1	£3.2	£32.4
Client/Information	£353.8	£1,199.6	£41.1	£139.4
Worker Involvement	£137.9	£704.1	£16.0	£81.8
<i>Cost Savings</i>				
Productivity Changes	-£9,036.9	-£6,209.4	-£1,049.9	-£721.4
Competence Checks	-£1,315.0	-£335.3	-£152.8	-£39.0
Costs to HSE	£0.1	£0.1	£0.01	£0.01
Total	-£3,526.3	£4,782.4	-£409.7	£555.6

Health and Safety Benefit Uncertainties

117. The estimated health and safety benefits are uncertain. It is unlikely that they will be smaller than the magnitudes estimated as 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, and 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

118. 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 £1.4 to £5.4 billion assuming expected compliance and £12.4 to £18.1 billion assuming 100% compliance, over the appraisal period. The cost savings from productivity increases would outweigh the estimated costs of the proposed Regulations.

Client Familiarisation Costs⁴⁴

119. 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%⁴⁵ 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 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 £40.7 million over the appraisal period.

Other Cost Uncertainties

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

12. Enforcement And Sanctions

121. Depending on the type of construction activity involved, the Regulations will be enforced by either the Health and Safety Executive or Local Authorities.
122. 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.
123. 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.

⁴⁴ 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.

⁴⁵ From BOMEL RIDDOR Research Report RR139.

Where appropriate, enforcement action may be taken in accordance with the HSC Enforcement Policy Statement.

124. 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.
125. 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.

13. Arrangements For Monitoring And Evaluation

126. HSE commissioned research to inform this document, and will be used as 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. It is estimated that this evaluation will cost between £75,000 and £100,000.

14. Contact Point:

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