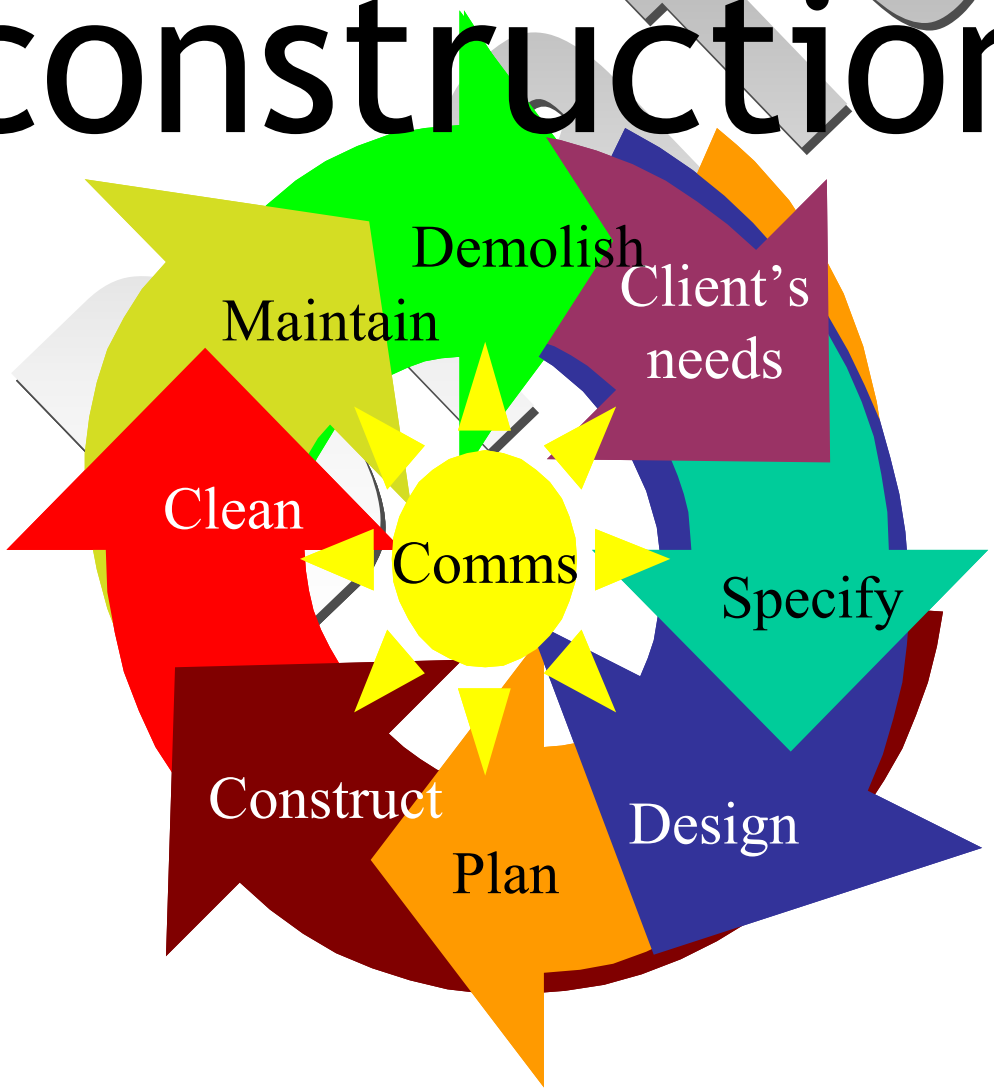
Managing Health and safety in construction



Contents

Status of this Document

This document contains guidance on the [proposed] Construction (Design and Management) Regulations [2006] (CDM^{2006}) from the Health and Safety Commission (HSC). Following the guidance is not compulsory and you are free to take other action. Only the courts can give an authoritative interpretation of the law, but if you follow the guidance you will normally be doing enough to comply. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance as illustrating good practice.

CDM^{2006} applies to both employers and the self-employed without distinction except for the requirements relating to training (Regulation 19(3)) and civil liability (Regulation 21). In considering the application of these Regulations and guidance to persons working under your direction, you should consider the following:

If you have people working under your control and direction who are treated as self-employed for tax and national insurance purposes, they may still be treated as your employees for health and safety purposes. You may, therefore, still be responsible for their training. It is important to remember that your duties under these Regulations and other health and safety law cannot be passed on to someone else by means of a contract.

Reading this Document

For convenience, the full text of the Regulations is included at Appendix 1. Key terms and abbreviations are explained in the glossary (Appendix 7). However, this document does not provide guidance on the site safety and welfare requirements in Schedules 2 and 3 (previously covered by the Construction (Health, Safety and Welfare) Regulations 1996 (CHSW)). Guidance on how to comply with those requirements can be found in HSG 150 and other HSE publications[1].

There are a number of lists of topics that you may need to consider. These lists are not exhaustive, nor are all the items included relevant to every construction project. They are provided to illustrate the sort of issues that are often relevant.

When deciding what you need to do to comply with these Regulations your focus should always be on action to reduce and manage risks. Any paperwork produced must help with communication and risk management. It is not a worthwhile end in itself. Pointless paperwork is, at best, a waste of effort and at worst a dangerous distraction from the real business of risk reduction and management.

Health and safety is one part of a much larger picture and it rarely makes sense to address it in isolation. HSC's aim is for health and safety to be integrated into normal management and working procedures, not treated as a bolt-on extra. This guidance is normally presented in this wider context, but **the legal requirements only extend to matters affecting health and safety**.

[1] See http://www.hse.gov.uk/construction/information.htm and http://www.hsebooks.com/

Chapter 1. Introduction

1. The Construction (Design and Management) Regulations [2006] (CDM^{2006}) come into force on [1st October 2006[2]]. They replace the Construction (Design and Management) Regulations 1994 (CDM^{94}) and the Construction (Health, Safety and Welfare) Regulations 1996 (CHSW). This document provides guidance on the duties set out in the Regulations. It replaces the ACoP to the Construction (Design and Management) Regulations 1994 from the [1st October 2006].

2. Most injuries and ill health resulting from construction work are avoidable with good co-operation, communication, design, planning and management. The industry spans a vast range of activities, hazards, materials, techniques, employment patterns, contractual arrangements and approaches to management of the project. Whatever the challenges or approach, what counts is that the health and safety of workers, and others affected by construction work is safeguarded. Getting this right at the design or planning stage not only reduces risks during construction, but throughout the whole life of a structure, including its eventual demolition.

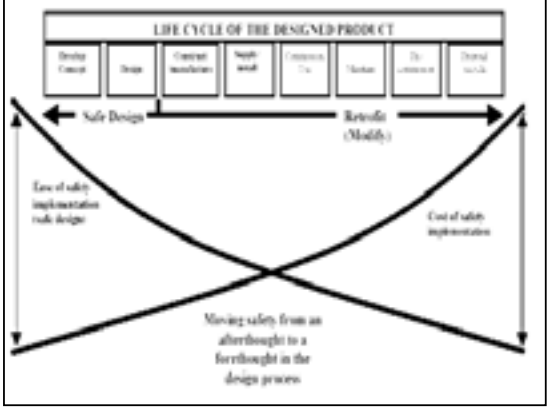
3. The key aim of CDM^{2006} is to integrate health and safety into the management of the project and to encourage everyone involved to work together to:

a) improve the planning and management of projects from the very start;
b) identify risks early on so that they can be eliminated or reduced at the design or planning stage and the remaining risks can be properly managed;
c) target effort where it can do the most good in terms of health and safety; and
d) discourage bureaucracy.

4. To achieve this each project needs a competent team of designers, contractors and other specialists who are:

a) appointed early, where they can contribute significantly to design and planning or have a lot of planning and preparation to do;
b) encouraged to work together as a team with the client to identify and solve potential problems before they become fixed;
c) clear about their roles and responsibilities; and
d) have enough time and resources to do their work, including design, planning, preparation and construction, properly.

Safe Design Model



5. The traditional procurement emphasis on lowest price overlooks the need for the team to work together to deliver best value. Time and thought invested at the start of projects is likely to pay dividends[3] not only in improved health and safety, but also in:

a) reductions in the overall cost of ownership because the structure is designed for safe and easy maintenance and cleaning work, and because key information is available in the health and safety file;
b) reduced delays waiting for crucial information, from unforeseen problems or abortive work;

Typical costs of a building* are in the ratio:

- 1 for construction costs
- 5 for maintenance costs
- 200 for operating costs.

* Report of the Royal Academy of Engineering on "The Long Term costs of Owning and Using Buildings" (1998)

[2] This depends on the response to this consultation exercise. New regulations now come into force in April or October.
[3] See http://www.constructingexcellence.org.uk/productivity/demonstration.jsp?level=0 for further information

c) more reliable costings and completion dates;
d) improved communication and co-operation between key parties; and
e) improved quality.

Scope

6. CDM[2006] applies to all construction work in Great Britain and its territorial sea, but some of the requirements, mainly the ones requiring appointments or particular documents, only apply to notifiable projects[4]. The Regulations affect and place duties on:

a) clients who make the key decisions about project resources, choose the construction team and determine how it works;
b) architects, engineers, surveyors, other designers, and others who decide what is to be constructed, and by their decisions influence risk during construction, maintenance and use;
c) those who co-ordinate the design work, planning and preparation;
d) contractors who have to plan their work and co-operate with each other to manage the remaining risks;
e) workers who are mainly the ones at risk of injury or ill health, sometimes many years later.

7. Health and safety is one part of a much larger picture and it rarely makes sense to address it in isolation. HSC's aim is for health and safety to be integrated into the normal management and working procedures, not treated as a bolt-on extra. The advice contained in this document is normally presented in this wider context, but **the legal requirements in CDM[2006] only extend to health and safety matters**.

Example 1

A series of complex buildings were built for a major pharmaceutical company. Three of the largest buildings also had a significant mechanical and engineering package, and were built with the close involvement of the client and an alliance partnership of contractors. An integrated team was established (see Para 4) as part of the planning and management arrangements. These buildings were completed speedily, and much quicker than others where a partnered approach had not been taken and integrated teams had not been formed. Significant time savings were achieved allowing the projects to be completed ahead of time.

8. CDM[2006] applies to both employers and the self-employed without distinction except for training[5] and civil liability. It is important to remember that such legal duties cannot be passed on to someone else by means of a contract.

9. CDM[2006] is only one of the legal requirements that applies to construction work. Other health and safety law including the Health and Safety at Work etc. Act 1974 (HSWA), the Management of Health and Safety at Work Regulations 1999 (Management Regulations) and the Work at Height Regulations 200X. Other key Regulations are listed in appendix 5. Guidance on these duties in construction and those in Schedules 2 and 3 of the Regulations can be found in HSG 150[6].

10. Other legal requirements also apply to the finished or modified structure and need to be addressed. These include Building Regulations (in Scotland, Building Standards), the Workplace (Health, Safety and Welfare) Regulations 1992 and fire precautions legislation.

[4] See paragraph 24.
[5] Employers are responsible for training their employees. Genuinely self-employed workers (people working under the control of others are usually their employees for health and safety purposes, even if they are treated as self-employed for other purposes) are responsible for their own training. See paragraph 240.
[6] Health and safety in construction – ISBN 0717621065

Construction work

Regulation 2

11. *Construction work* is building, civil engineering or engineering construction work, including:

a) associated preparations, cleaning, structural maintenance (including repair, renovation, upkeep and re-decoration), demolition and dismantling as well as clearing or otherwise preparing the site for use at the end of the work;

b) the installation, commissioning, maintenance, repair or removal of any services, equipment where it is fixed to the building (eg air-conditioning units, lifts and telecommunications) or big plant (eg silos, chemical/nuclear reactors and boilers that are virtually buildings in their own right and where the same structural erection, maintenance and other issues arise) – mechanical maintenance of plant is not covered (see paragraph 12 b);

c) offshore construction within the territorial sea, except for the construction of fixed offshore oil and gas installations at the place where they will be used;

d) exploratory work in preparation for construction, including the drilling of exploratory boreholes and investigatory work, but not site surveys;

e) construction of temporary structures used during construction work (eg formwork, falsework, scaffolds or other structures providing support or means of access).

12. The following are **not** construction work:

a) putting up and taking down marquees and similar tents designed to be re-erected at various locations;

b) the maintenance of plant, except when this is structural (eg painting a large silo) or done as part of other construction work;

c) tree planting and general horticultural work;

d) archaeological investigations;

e) positioning and removal of lightweight partitions, such as those used to divide open-plan offices or to create exhibition stands and displays;

f) erection of scaffolds for support or access in non-construction work;

g) surveying – this includes taking levels, making measurements and examining a structure for faults;

h) work to or on vessels such as ships and mobile offshore installations;

i) off site manufacture of items for later use in construction work (eg roof trusses, pre-cast concrete panels, bathroom pods and similar prefabricated elements and components);

j) fabrication of elements which will form parts of offshore installations.

13. Some construction projects include operations, such as those described in the previous paragraph which are not themselves construction work. Where this is the case, the overlap between the construction and non-construction work should be addressed in the management arrangements and the health and safety plan.

14. HSWA and other health and safety legislation, including requirements listed in appendix 5, apply whether or not an activity is construction work, as explained above.

Planning and managing construction projects

15. These regulations are intended to focus attention on planning and management throughout construction projects, from design concept onwards. The aim is for health and safety to be treated as an essential, but normal part of projects and an integral part of the responsibilities of everyone involved – not an afterthought or bolt on extra. **The effort devoted to planning and managing a project should be in proportion to the risk and complexity involved.** For example demolition work normally needs meticulous planning and management to ensure that lives are not put at risk, but painting a house does not — as long as the risk of falls is properly addressed.

16. The client has the biggest single influence over the competence and resources of the construction team and the way the project is run. This is why the Regulations require them to ensure that arrangements are in place for the planning and management of the project from the start. Where the work is notifiable or involves complicated or high-risk work clients need help to develop and implement these arrangements. The construction team needs to provide them with the support they need. In the case of notifiable projects this has to be formalised by the appointment of a co-ordinator and principal contractor.

Example 2

On a major office development with a large central atrium, the electrical contractor highlighted an innovative product for the roof glazing that was unknown to the other team members, including the designers. This was a double glazed unit incorporating internal prismatic reflectors.

It removed the problem of glare and the need for high-level roller blinds. It was virtually maintenance free, and lead to significant savings over the life the building, and significantly reduced the need to work at height.

17. Good co-operation and communication between all of the parties involved in a project is essential if risks are to be identified early on and properly addressed, allowing the project to run efficiently. A team of designers, consultants, contractors and even manufacturers who work closely together provides the most effective basis. This allows the client, designers, contractors and facilities management experts, **together**, to identify the best solution for the clients needs, taking account of the practicalities of construction, maintenance and use. Even on projects where it is not practical to formally establish an integrated team, the client, designer, contractors and others involved in the project still need to work together.

18. If there are other projects on the same or neighbouring sites (eg adjacent units on the same industrial estate) then the co-operation and communication needs to extend to those involved with such projects. If this need can be identified early on, the risks that one project may cause for the other can also be identified and addressed in the early stages of project planning. If potential problems are not identified until the actual work has started they can be much more difficult to address and close liaison between the contractors will be needed.

19. To make the team a success the:

a) core team (co-ordinator, main designers, principal contractor and key specialists) needs to be appointed and involved as early as possible;
b) planning and management arrangements need to be agreed from the feasibility and concept stage (although they may be developed as the project progresses), the gateway approach provides a useful framework – see appendix 4;
c) roles and responsibilities of the team members need to be agreed and clearly set out;
d) arrangements to encourage good communication need to be agreed and put into practice;
e) timetable and resources allowed must be realistic; and
f) lessons need to be learned – what works, what needs to be improved.

20. Managing projects is also about getting the practical precautions right on site and Schedule 3 to the Regulations covers some key issues.[7] Regulation 20 is intended to place the duty to ensure that these requirements are complied with on those who are in the best position to ensure that the precautions are properly developed and implemented. The main responsibility normally rests on the contractors who control the work. This includes principal contractors, particularly for site wide issues like traffic routes.

21. Others who control the way in which the work is done also have duties under Schedule 3. This doesn't mean everyone involved with design, planning or management of the project legally must ensure that all of Schedule 3 is complied with. They only have such duties if, in practice, they exercise significant control over the actual working methods, safeguards and site conditions.

[7] Others are addressed in the Regulations listed in appendix 5.

22. If, for example, a client who requires an excavation to be made and supported in a particular way also has a duty to ensure it complied with paragraph 6 of Schedule 3, so does the contractor doing the excavation work.

23. Effective health and safety requires clear lines of management. Those directly responsible for carrying out the work normally also have the primary responsibility. Others should not ignore obvious shortcomings, but neither should they undermine the agreed management arrangements.

Notifiable projects

Regulations 2(3) and 9

24. HSE must be notified of projects, except those for domestic clients, where construction work is expected to:

- last more than 30 working days; or
- involve more than 500 person days , eg 50 people working for over 10 days.

25. Where a small project, which is not notifiable, requires a short extension or small increase in the number of people, there is no need to notify HSE. However, if the work overruns, or the scope changes significantly so that it becomes notifiable, HSE should be informed.

26. The information that has to be sent to HSE is set out in Schedule 1 of CDM2006. Form 10(rev) can be used and is available from HSE's local offices[8] or can be completed online[9]. You do not have to use this form, as long as you provide all of the specified information. Notification should be sent to the HSE office that covers the site where the construction work is to take place.[10]

27. Clients, or co-ordinators acting on their behalf, should notify HSE before design work begins. If the principal contractor is not appointed at that time then another, updated, notification must be made after they have been appointed. Any missing information must be notified once it becomes available; and the notifier should make clear that it relates to an earlier notification. If a significant change occurs, it is helpful to notify HSE, for example when a new principal contractor is appointed or if the start date changes by a month or more.

Non-notifiable projects

28. The duties on designers and contractors apply to non-notifiable projects, but clients do not have to appoint a co-ordinator or principal contractor and plans do not normally need to be in writing. However, where the work of different designers or contractors interacts, arrangements for co-ordination are likely to be needed. The roles of the co-ordinator and principal contractor provide guidelines as to what needs to be done, but in low risk projects a low-key approach is sufficient.

29. If such co-ordination is needed it is normally sensible for the most appropriate member of the construction team to co-ordinate the work. For example:

- the architect, lead designer or contractor, who is carrying out the bulk of the design work, should normally co-ordinate the design work;
- the builder or main contractor, if there is one, should normally co-ordinate construction work.

30. Although a written plan is not required for non-notifiable projects, apart from demolition[11] work, other high risk work must be well planned and managed. This includes work involving:

- significant structural alterations;
- deep excavations, particularly in unstable or contaminated ground;

---

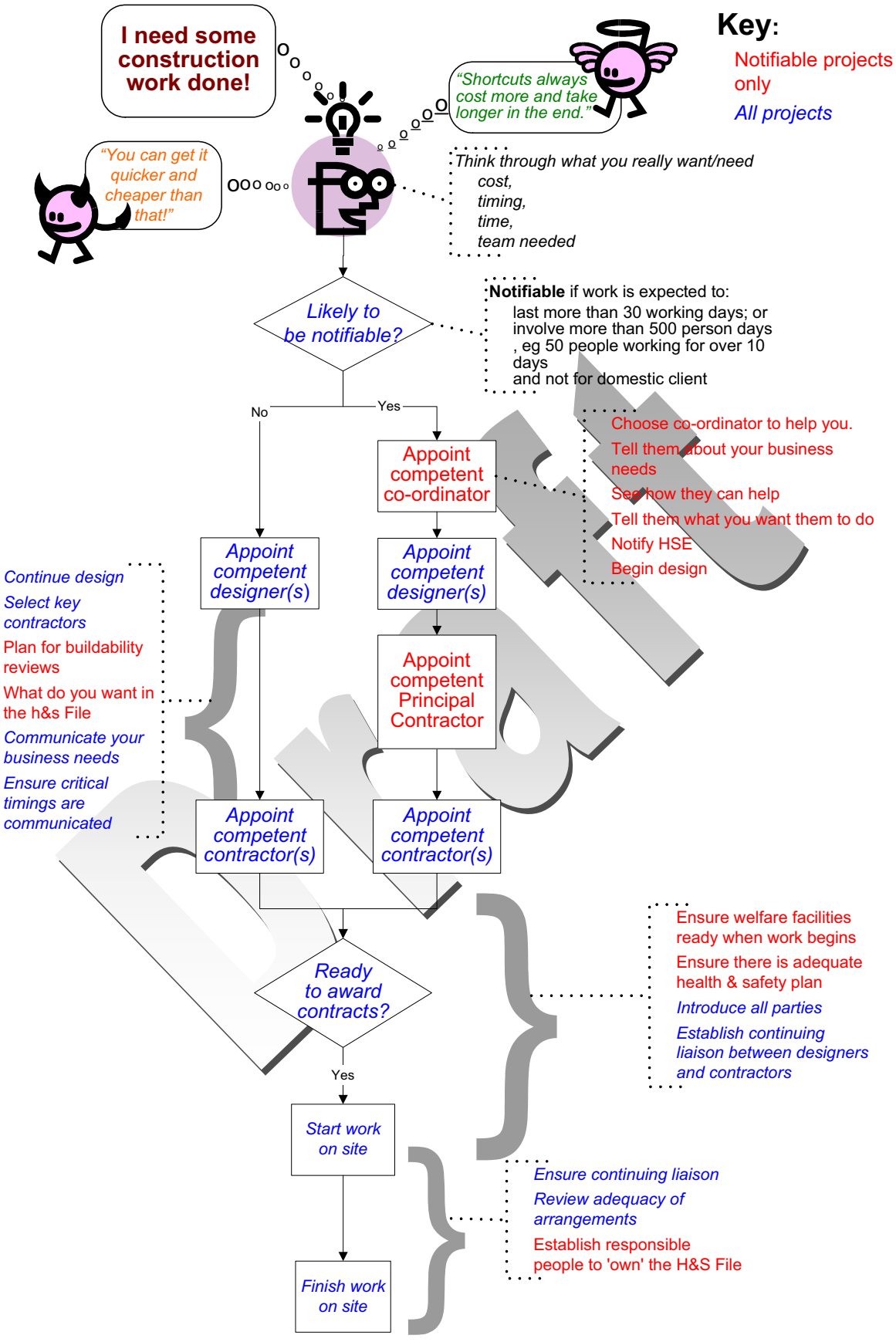
[8] https://www.hse.gov.uk/forms/notification/f10hseoffices.htm
[9] https://www.hse.gov.uk/forms/notification/f10.pdf
[10] Addresses of HSE's local offices and the areas they cover can be obtained from HSE's Infoline (08701 545500) or HSE's internet site http://www.hse.gov.uk/contact/maps/
[11] Schedule 4, paragraph 4 requires the system of work to be written out for demolition work, even if it is not part of a notifiable project. See also paragraph 31.

- unusual working methods or safeguards;
- ionising radiation or other significant health hazards;
- nearby high voltage powerlines;
- a risk of falling into fast flowing water;
- diving;
- explosives;
- heavy or complicated lifting operations.

31. It is vital that those doing such work understand the risks involved and what to do about them. If they have done the same thing many times before or they understand what they have to do after a couple of minutes of simple explanation, then there is no need to write it down. In other simple cases a brief summary that clearly sets out who does what and in what order is enough. If this is not sufficient something closer to the construction phase plan may be needed. (See paragraph 189.)

Summary of requirements

32. The following chart and table summarise the duties under CDM^{2006}. A number only apply to projects which are notifiable, largely to avoid unnecessary paperwork. These are mainly requirements to make appointments or to prepare plans or other documents. These requirements are indicated later in this document by putting *(Notifiable projects only)* after the heading.



NB. This page is in colour in the online version

Duty-holder	*All construction work*	*Notifiable projects* *Everything in columns 1 plus*
Clients *	✓ Check competence of all appointees ✓ Ensure there are suitable management arrangements for the project ✓ Allow sufficient time and resources for all stages **(* Excluding domestic clients)**	✓ Appoint co-ordinator and ensure job done properly* ✓ Appoint principal contractor* ✓ Provide information ✓ Make sure that the construction phase does not start unless there are suitable: o welfare facilities, and o construction phase plan ✓ Retain and provide access to the health and safety file **(* There must be a co-ordinator and principal contractor until the end of the construction phase)**
Co-ordinators		✓ Advise and assist the client with his/her duties; ✓ Notify HSE ✓ Co-ordinate design work ✓ Manage health and safety communication between client, designers and contractors ✓ Liaise with principal contractor re ongoing design ✓ Prepare/update health and safety file
Designers	✓ Eliminate hazards and reduce risks due to design ✓ Provide information about remaining risks	✓ Check client is aware of duties and co-ordinator has been appointed ✓ Check HSE has been notified * ✓ Provide any information needed for the health and safety file
Principal contractors		✓ Plan, manage and monitor construction phase in liaison with contractors ✓ Prepare, develop and implement a written plan and site rules. (Initial plan completed before the construction phase begins.) ✓ Give contractors relevant parts of the plan ✓ Make sure suitable welfare facilities are provided from the start and maintained throughout the construction phase. ✓ Check competence of all their appointees ✓ Ensure all workers have site inductions and any further information and training needed for the work ✓ Consult with the workers ✓ Liaise with co-ordinator re ongoing design ✓ Secure the site
Contractors	✓ Plan, manage and monitor own work and that of workers ✓ Check competence of all their appointees and workers ✓ Train own employees ✓ Provide information to their workers ✓ Comply with requirements in Schedule 2 & 3 and other regulations ✓ Ensure there are adequate welfare facilities for their workers	✓ Check client is aware of duties and a co-ordinator has been appointed and HSE notified before starting work ✓ Co-operate with principal contractor in planning and managing work, including reasonable directions and site rules ✓ Provide any information needed for the health and safety file ✓ Inform principal contractor of problems with the plan ✓ Inform principal contractor of reportable accidents and dangerous occurrences
Everyone	✓ Check own competence ✓ Co-operate with others involved in the project ✓ Report obvious risks ✓ Comply with requirements in Schedule 3 and other regulations for any work under their control.	

Chapter 2. Clients

33. Clients have substantial influence and contractual control and must exercise this responsibly to ensure that a competent construction team is appointed and that it can work together effectively to identify, reduce and manage risks associated with the construction work. Their decisions and approach, determine:

a) the time, money and other resources available for projects;
b) who makes up the team, their competence, when they are appointed and who does what;
c) whether the team is encouraged to co-operate and work together effectively;
d) whether they have the information that they need about the site and any existing structures;
e) the arrangements for managing and co-ordinating their work.

34. Because this is so important clients[12] are accountable, under CDM[2006], for the impact their approach has on the health and safety of those working on or affected by the project. However, the Regulations also recognise that many know little about construction health and safety, so **clients are not required or expected to plan or manage projects themselves.** Nor do they have to develop substantial expertise in construction health and safety, unless this is central to their business. Clients must ensure that various things are done, but are not normally expected to actually do them themselves and, therefore, need help from the project team.

35. Clients must make sure that there are reasonable management arrangements throughout the project to ensure that:

- the construction work can be carried out reasonably safely; and
- fixed workplaces (eg offices, shops, factories, schools) will be safe to use; and
- there are suitable welfare facilities.

With great power, comes great responsibility

36. To help them develop these arrangements, for notifiable projects clients have to appoint:

- a co-ordinator to advise them and assist with their duties – mainly in the design and planning stages; and
- a principal contractor to manage the construction phase.

37. Getting the right people for these roles is particularly important for clients with little construction or health and safety expertise, as they need to be able to rely on their support and advice.

Who are clients?

Regulation 2

38. A client is an organisation or individual for whom a construction project is carried out, whether by others or in house. This can include, for example, local authorities, school governors, insurance companies and project originators on Private Finance Initiative (PFI) projects. Domestic clients are a special case and do not have duties under CDM[2006].

Example 3

A developer funded improvements and alterations to the highway as a part of a major shopping development. The improvements and alterations had to satisfy the requirements of the highway authority.

In this case the developer engaged all the contractors, and was the only client, but the highway authority was still a designer.

[12] Domestic clients have no legal duties under these Regulations. See paragraph 88.

39. In some circumstances it may not be immediately obvious who is legally the client and there can sometimes be more than one client involved in a project. **To avoid confusion, this needs to be resolved by those involved at the earliest stage possible.** Take into account who:

- ultimately decides what is to be constructed, where, when and by whom;
- commissions the design and construction work (the employer in contract terminology);
- initiates the work;
- is at the head of the procurement chain;
- engages the contractors.

40. If there is still doubt, then all of the possible clients can appoint one of them as the only client for the purposes of CDM[2006]. (See paragraph 50.)

Example 4

A client recognised that welfare facilities were required from the very beginning of the construction phase. This meant services had to be installed early.

She arranged, with the utilities, for these services to be installed at the very start of the construction phase To ensure that services would be available from the start of the construction phase, arrangements were made with utility companies for enabling works to be done before the principal contractor arrived on site in conjunction with the principal contractor.

This reduced the lead-time required before construction could begin.

What clients must do

41. Clients must always:

a) check that the designers, contractors and other team members that they propose to engage are competent, adequately resourced and appointed early enough for the work they have to do;

b) allow sufficient time for each stage of the project, from concept onwards;

c) ensure there are suitable communication and management arrangements for the whole project, from concept onwards. (This does not mean managing the work themselves, as few clients have the expertise and resources needed and it can cause confusion.) Designers and contractors should be able to advise for non-notifiable projects where no co-ordinator is required;

d) co-operate with their project team.

Example 5

A designer specified tilt and turn windows to reduce risks during window cleaning. The client overruled this on the grounds of cost. The designer pointed out that the client was taking over his duties under reg.13, and needed to address how the risk to window-cleaners could be minimised and how the duties under the Workplace Regulations could be complied with.

42. In the case of notifiable projects[13] they must also:

a) appoint a co-ordinator right at the start of the design work to advise and assist them with their duties;

b) provide the co-ordinator with information:
   - likely to be needed by designers, the principal contractor and other contractors to plan and manage their work; and
   - about the mobilisation period;

c) ensure that HSE is notified, usually by the co-ordinator;

d) appoint a principal contractor to plan and manage the construction work – if possible early enough for them to advise on buildability and maintainability; and

e) ensure that the construction phase of notifiable projects does not start until:
   - the principal contractor has prepared a suitable health and safety plan; and
   - there are suitable welfare facilities;

f) make sure the health and safety file is reviewed, updated or prepared at the end of the construction work. This must then be kept available for any future construction work or to pass on to a new owner.

[13] See paragraph 24.

43. If a client does not make these appointments they are legally liable for the work that the co-ordinator and principal contractor should do, as well as for not making the appointments.

44. **Clients can also, intentionally or unwittingly, take on additional responsibilities.** If they specify materials or methods of working they may well be liable as designers in relation to those specific matters. They will also legally be contractors, if they directly manage or carry out construction work. If so, it is important that they understand and fulfil such duties as set out in the remaining chapters and Schedules 2 and 3 of the Regulations.

Management arrangements

Regulation 7

45. Clients must make sure that there are suitable arrangements for managing projects so that the work can be carried out safely and without risk to health. These should address:

a) their requirements about the way the project is to be run (eg fencing of the site, movement of vehicles or permit to work procedures) taking account of any risks to the public and the client's or site occupier's employees or customers;
b) the resources, roles, functions and responsibilities of members of the project team, how they inter-relate and, where relevant, the timing of appointments;
c) how communication, co-ordination and co-operation (eg between designers and contractors) will be facilitated and encouraged;
d) how and when the design, elements of it and design changes, are to be reviewed to check that the requirements of regulation 14 have been addressed and that the different design elements work together. This is normally best addressed as part of a buildability, maintainability, usability review which addresses practicality and costs as well as health and safety;
e) the format of the health and safety file (to ensure it is suitable for the client), how, when and by whom information is to be provided for it;
f) how the project will be monitored (usually by the co-ordinator before construction starts and the principal contractor afterwards) and reviewed; and
g) the interface with any other projects on the same or neighbouring sites.

46. The most important thing is that all key tasks are clearly allocated and everyone understands what they have to do, when and in what order. Key aspects of the arrangements should be recorded in the information pack – see paragraph 121 and appendix 2 – but they should be written simply, clearly, and concisely. For low risk projects (including most non-notifiable projects) a simple table that sets out who does what, is likely to be all that is needed.

47. In notifiable and higher-risk projects clients are likely to need help from someone with practical and health and safety expertise of such work to develop the arrangements. Co-ordinators should be able to do this work for clients. The gateway approach provides a useful framework – see appendix 4. Particular attention is needed where the project involves high-risk work like asbestos removal or demolition. (See paragraph 30.)

48. The arrangements may be included in other documents, for example the health and safety plan or contracts, but must not be obscured by other items. However it is done, all of the tasks must be appropriately and clearly allocated. (Further general guidance on health and safety management is provided in 'Successful health and safety management' HSG(65)).

49. In addition to their duties under CDM^{2006} clients may also have duties under HSWA regarding the health and safety of their own employees, other workers or members of the public. They need to ensure that the management arrangements take account of such duties. The results of any monitoring can also provide good evidence of competency for any similar future projects.

Combining related projects

Regulation 6

50. Where there are several related projects with different clients (eg constructing and fitting out a shop) it can make management easier if they are combined and treated as a single project. The Regulations therefore allow several clients to agree to treat their joint projects as one, so that one of them will be treated as the only client from then on. But the other clients still have to ensure the competence of any of their own appointees, co-operate with others involved in the project and provide any relevant information.

Appointments – general

Regulations 4, 7 and 10(1)(d)

51. When appointing co-ordinators and principal contractors or engaging designers and contractors clients have to consider a wide range of factors including:

- their competency to carry out the work to the necessary/required standards[14];
- the resources (eg staff, equipment and, particularly, time) needed to plan and do the work properly.

52. **Clients must not take on these tasks themselves unless they are competent and have adequate resources,** including time, to do so properly. This may be easy with simple projects, eg painting interior walls, which are only 2-3 metres high, using non-toxic paints. However, most construction work requires much more expertise in both health and safety and practical management.

53. Clients also need to consider the timing of their appointments to ensure that appointees:

- have sufficient time to plan prepare and mobilise; and
- can contribute to developing designs and plans – eg designers and contractors can discuss designs to ensure that they are buildable and maintainable and contractors can be involved in developing the construction phase plan.

Appointment of the co-ordinator

(Notifiable projects only)

Regulations 4 and 8(1)

54. A client must appoint a competent (see paragraph 103), adequately resourced co-ordinator before the design work starts for high-risk and notifiable projects. This is a new role, which has been developed from that of the Planning Supervisor. It is intended to provide clients with an empowered health and safety advisor who is pivotal in ensuring an effective and cohesive project team. Their main purpose is to help clients to carry out their duties. Under the Management Regulations[15], clients must also appoint competent persons to assist them with their legal duties. The appointment of the co-ordinator is likely to fulfil this duty as well, as they should be able to advise the client on all of the construction related issues.

55. Clients must make sure that all of the co-ordinator's tasks, as set out in regulation 13, are carried out properly.

56. Early appointment is crucial for effective planning and management arrangements to be established, implemented and monitored from the start. In addition, the greatest potential for improving health and safety is at the concept and scheme design stages. As a scheme moves into

[14] These Regulations only require competence and resources in relation to health and safety, but clients concerns are much wider and it is more sensible to address this as part of the wider issue of competence and resources to do the work to the expected standards, eg quality and timescale.

[15] Regulation 7(1)

the detailed design stage, it becomes more difficult to make fundamental changes that eliminate hazards and reduce risks associated with early design decisions.

57. This is why CDM[2006] requires co-ordinators to be appointed *before design work, or planning or other preparation for construction work is begun* to allow them to:

a) advise clients generally, but particularly on the competence and resources of their appointees;
b) notify HSE about the project;
c) ensure that design work (including that during the construction phase) and early planning is properly co-ordinated;
d) develop effective management arrangements for the project;
e) locate the information needed for designers and contractors (the Information Pack) and advise the client if surveys need to be commissioned to fill significant gaps;
f) advise the client on the suitability of the initial construction phase plan;
g) produce or update a relevant, user friendly, health and safety file suitable for future use at the end of the construction phase.

58. There can be significant advantages in having a completely independent co-ordinator because their advice is not coloured by other practical or financial interests. However, they may combine this work with another role, for example, project manager, designer or principal contractor as long as the co-ordinator is competent and has sufficient independence to carry out their tasks effectively.

59. More information on the duties of co-ordinators is contained in chapter 3.

Arranging design work

Regulations 4, 7 and 14

60. Clients must employ only competent designers. (See paragraph 148.) Clients often employ more than one designer, for example architects, civil, structural and services engineers. In such cases they all need to know who does what and the timing of the appointments needs to enable the design work to be co-ordinated from an early stage.

Example 6

On a large contract for a bank, worth several million pounds, the co-ordinator was appointed late and given less than 48 hours to prepare the information pack.

This meant that there was insufficient time to properly consider the plan. Work was delayed because the contractor had no information about the underground services to be found on site. In addition the co-ordinator was not able to influence the design.

61. Nominating one designer as the 'lead designer' is often the best way to ensure co-ordination and co-operation during design work which involves a number of designers. This 'lead designer' may be appointed as a co-ordinator under regulation 8, but the co-ordinator's duties are wider than just design co-ordination and suitable arrangements must be made to carry out all of the co-ordinator's tasks.

62. Clients who specify materials or methods of working may well be liable as designers in relation to those specific matters. In addition where they employ designers who are based outside Great Britain they are responsible for ensuring that the design complies with regulation 14. The co-ordinator should be able to help.

63. More information on the duties of designers is contained in chapter 4.

Appointment of the principal contractor

(Notifiable projects only)

Regulations 4, 8(2), 16 and 17

64. Clients must appoint one competent[16], adequately resourced principal contractor to plan, manage and monitor the construction work. This can be an organisation or an individual and is usually the main or managing contractor. A principal contractor's key duty is to manage the construction phase to ensure the health and safety of everybody affected by the work. The client's arrangements and other appointees should not compromise the ability of the principal contractor to do this.

65. The principal contractor must be appointed as soon as the client knows enough about the project to select a suitable contractor. Early appointment allows the principal contractor, and indeed other specialist or maintenance contractors and facilities management experts to make a substantial contribution to ensuring the buildability and maintainability of a project. This helps, not only to eliminate and reduce risks to health and safety, but also to avoid interruptions, delays and other problems, which can add significantly to the whole life cost of a project[17].

66. Early appointment is also essential for the principal contractor to have sufficient time to develop an adequate construction phase health and safety plan and to arrange for appropriate resources, including welfare facilities, to be available when work commences on site. (Making sure that suitable welfare facilities are provided when work starts on site is a specific duty on both the client and principal contractor.[18])

67. **There can only be one principal contractor at any time** to ensure clear lines of management. To ensure continuity, clients should normally keep the same principal contractor for the whole project from site clearance and preparation to final completion. Exceptions to this include:

- preliminary works, eg involving demolition or site preparation work, where there is a substantial delay between site clearance and the start of new construction work;
- separate projects for different clients, eg for a building shell and subsequent fitting-out work.

68. More information on the duties of principal contractors is contained in chapter 5.

Notifying HSE about appointments

(Notifiable projects only)

Regulation 9

69. The client must make sure that HSE is notified of the project and appointments (usually by the co-ordinator) at the very start of the design work. The principal contractor's details can be provided later, if necessary. Paragraph 24 provides further detail.

[16] See paragraph 183.
[17] The whole life cost of a structure includes the cost of maintenance and use and is typically over 200 times the construction cost.
[18] Regulations 11(b) and 16(1)(b)

Information

Regulation 10 and 13(2)

70. Clients must provide the project-specific information needed by designers and contractors to identify hazards, including those arising from previous work, site conditions, and activities on or near the site. This includes hazards that clients already know about or suspect, for example because they are covered in information already in the client's possession. Clients must also provide information that can be obtained by making sensible enquiries, including surveys and other investigations when necessary. (In the case of notifiable projects, co-ordinators normally advise the client as to what is needed and arrange for relevant parts to be given to designers and contractors.)

Example 7

A client proposed to build a new ferry terminal. The client informed the co-ordinator about the operation of the nearby liquefied petroleum gas terminal.

The design and health and safety plan took account of the potential impact of shipping operations on the construction project, and enabled risks to the LPG operations to be identified and minimised.

71. Clients must not leave it to contractors to discover such hazards. The information provided, must be sufficient to ensure that significant risks during the work can be anticipated and planned for. It must be provided, as in the information pack[19], in time for designers and contractors to take account of them when preparing to bid for or plan their work. It must point out those issues that designers and contractors could not reasonably be expected to anticipate or identify, but not obvious hazards. Appendix 2 lists topics that need to be considered.

72. Clients who already have a health and safety file from earlier work under CDM^{2006} or CDM^{94}, or have previously carried out surveys or assessments, including under the Control of Asbestos at Work Regulations 2002[20], may already have all, or much, of the information needed. However, they also need to ensure that contractors are provided with relevant information provided by designers under regulation 14(5). (Clients who do not have maintenance or repair responsibilities for the premises must obtain information about risks, due to any asbestos that may be present, from whoever has such responsibilities in the area affected by the planned work.)

73. Information about sites or existing structures, which will be needed when work begins, should be obtained as early as possible. Information about relevant underground services should be obtained from utility companies and other service owners. Where their exact location is crucial it is important to verify it with cable-location or other detection equipment. It is rarely necessary to locate services using trial excavations before work on site starts.

Example 8

A client was aware that there could be high levels of arsenic in the soil in their locality. He arranged for tests to be carried out and found significant levels.

The risk at such levels was made clear and the need to develop appropriate risk control measures was made clear in the co-ordinator's information pack.

74. This information needs to be in a form that is convenient, ie clear, concise and easily understood, but it can be included in other documents, for example the specification, providing the relevant health and safety issues are fully covered.

75. Clients also have to tell principal contractors and contractors they choose themselves the minimum notice that they will be given before they are expected to start construction work. This is to ensure that they have sufficient time to plan and prepare – eg mobilise their workforce and equipment. (See also Regulation 7(2)(a)(ii) and (b)(iii).)

[19] See paragraph 121.
[20] Further information can be found at http://www.hse.gov.uk/pubns/asbindex.htm.

Planning the construction phase

Regulations 7(2) and 11

76. Proper planning of the whole project is essential for effective risk management. It makes delays or increased costs due to unforeseen problems far less likely, and helps identify measures to reduce the risk of injury. Planning and preparing for construction can require considerable work. Clients must allow adequate time and tell contractors the minimum notice they will be given to mobilise.

77. In the case of notifiable projects, clients must ensure both that suitable welfare facilities are provided and that the plan is set out in writing before the construction phase begins. Clients, usually through the co-ordinator, must ensure that the plan is suitable, project-specific and sets out:

- the framework for managing and monitoring health and safety standards on site, including the emergency procedures, arrangements for communications and provision of welfare facilities;
- the key health and safety issues for the early stages of the project.

78. CDM[2006] only requires clients to ensure that there is a suitable plan before construction begins; they do not have to approve the plan. The co-ordinator normally advises on its suitability.

79. Once the construction phase has begun, neither clients nor co-ordinators have a duty, under CDM[2006], to check that the plan is updated; this is the responsibility of the principal contractor. However, the client has to ensure that there are appropriate monitoring arrangements; this is normally the responsibility of the principal contractor.

Example 9

A row of single storey brick built garages was to be demolished. The site was to be completely fenced off. The information pack stated that there were no hazardous substances or services to the garages. It provided details of the access route to the garages and stated that in recent months children had been playing in the area.

The principal contractor and demolition contractor agreed that no other information was needed.

Completion and handover

80. One of the most important stages in a project is when it nears completion and is handed over to the client. It is rare for all construction work to be completed before handover. Sometimes clients, in their eagerness to have things up and running, assume control when a great deal of construction work remains.

81. It is also tempting to cut back on management resources at this stage. However, risks to employees and others not engaged in construction work can increase substantially as they visit the site or spend more time there. The risks to the construction workers can also increase, due to the presence and work of others not directly engaged or experienced in construction work.

82. To minimize such risks, the management of this phase needs to be considered well in advance of completion and handover to address:

- the nature, scope and duration of any finishing off work;
- how this work will be managed and by whom;
- how the site will be split up, and access controlled, to safeguard construction workers as well as clients' employees and/or members of the public.

The health and safety file

(Notifiable projects only)

Regulation 12

83. The health and safety file (*the file*) is a source of information to reduce the risks and costs involved in future construction work including cleaning, maintenance, alterations, refurbishment and demolition. Clients therefore need to ensure that the file is available for inspection in the event of such work. It is a key part of the information which the client, or the client's successor, must pass on to anyone preparing or carrying out work to which CDM[2006] applies.

84. At the end of the construction phase, normally at practical completion, the file must be finalised and given to the client by the co-ordinator. In some cases, for example where there is partial occupation or phased handover of a project it may be needed earlier to inform other work. For this to happen, clients need to make appropriate arrangements at the beginning of the project to collect and compile the information that is likely to be needed for the file as work progresses. Clients also need to agree the timing and a suitable, user-friendly format with the co-ordinator.

85. The file can provide significant benefits to the client by minimising the cost of future work. It is therefore well worth the effort to ensure it is kept up to date, even when work not subject to CDM[2006] is carried out. There is further information about the file and its contents in chapter 10.

Particular types of clients

PFI, PPP and similar forms of procurement

86. Difficulties can arise if management of the project and design issues are not addressed during the early stages of PFI / PPP projects. By the time a contract is awarded, addressing them is likely to be ineffective and expensive. Because of the wide variety of projects and approaches adopted it is difficult to provide definitive guidance, but HSE believes the following principles should be applied:

a) The Government is committed to act as an exemplar in matters of health and safety.
b) The project initiator[21] should ensure that effective arrangements for the management of the project are implemented, from project concept, so that:
    - all those with an influence on health and safety exercise that influence responsibly;
    - a co-ordinator is appointed before design work begins – including development of the specification, where relevant; and
    - developing designs address health and safety issues from concept stage – even where there is no commitment to a particular design.
c) The role and responsibilities of the client can transfer from one party to another as the project proceeds. (This is normally the case when the Special Purpose Vehicle (SPV) is appointed or when a preferred bidder is appointed with full responsibility for the specification and delivery of a project.) Any such transfer must:
    - be clear to, and agreed by, all those involved;
    - clearly recorded;
    - provide the practical authority and control needed to discharge the client's duties.
d) Even after such a transfer the project initiator will:
    - pass on any relevant information in their possession;
    - exercise any remaining contractual control responsibly;
    - co-operate with others involved in the project.

87. Project originators are legally the client at the start and must take the initiative[22]. Because the co-ordinator has to be appointed and HSE notified before design work starts, this normally falls to the project originator, as does responsibility for setting out the management arrangements. The project originator cannot wait until someone else, eg the SPV, takes over.

Work done for domestic clients

88. Domestic clients are people who have work done on their own home, or the home of a family member that does not relate to their trade, or business. It is the type of client that matters, not the

[21] Normally a public body, eg a government department, local authority or health authority.
[22] If the project only involves the provision of a service and does not explicitly require construction, the SPV or tenderer proposing a solution including construction is legally be the client from the outset.

type of property. Local authorities, housing associations, charities, landlords and other businesses may own domestic property, but they are not domestic clients. If the work involves a business attached to domestic premises, such as a shop, the client is not a domestic client.

89. Domestic clients have no duties under CDM^{2006}. Co-ordinators and principal contractors don't have to be appointed or health and safety plans or files produced on projects for such clients. Sometimes groups, who would otherwise be domestic clients, form companies to administer construction work. A common example of this is a company formed by leaseholders of flats to undertake maintenance of the common structure. In such a case, the company is a client with a client's duties.

Is work done for a domestic client exempt?

90. **No!** Work for domestic clients is not exempt from CDM^{2006}. Designers and contractors still have their normal duties. Only the client is exempt.

91. Designers and contractors working for domestic clients have to manage their own work and co-operate with the others to safeguard the health and safety of all involved in the project. They cannot assume that their client will manage it properly or provide suitable work equipment, eg if they borrow the client's ladders. The requirements in Schedules 2 and 3 and other health and safety law still apply. Appendix 5 lists some of the most relevant requirements.

Insurance and warranty claims

92. An insurance company arranging for construction work to be carried out under the terms of an insurance policy is the client for the purposes of CDM^{2006}. However, where the insured arranges the work and the insurance company reimburses them the insured is the client.

93. If the insurer specifies designers or contractors for certain aspects of the work, then they are responsible for establishing that they are competent. Chapter 7 provides more information on how to do this.

94. It is common, with insurance-related work, for agents to be appointed to act on behalf of either the insured or insurer. These agents resolve claims and may co-ordinate the remedial works. Such agents may legally be clients with all the relevant duties.

95. Where remedial work is carried out under a home warranty scheme, such as those provided by the National House Building Council (NHBC), it is the provider of the warranty, eg NHBC, which is the client for the purposes of CDM^{2006}.

Developers

96. In some instances, domestic clients may buy a house or flat before the whole project is complete, for example where house builders develop a site with a view to selling a number of homes. In such cases the purchaser may have an interest in the property, but it is still the developer who arranges for the construction work and is legally the client.

97. Builder-developers are often both client and principal contractor, although they may appoint another contractor as principal contractor. They may also be a designer or co-ordinator. They must comply with CDM^{2006} in all their roles.

What clients don't have to do

98. Clients are not required or expected to plan or manage construction work themselves.

Chapter 3. The co-ordinator

(Notifiable projects only)

99. The role of co-ordinator has been developed from that of the Planning Supervisor. It is intended to provide the client with an empowered and key health and safety advisor who is pivotal in ensuring an effective and cohesive project team. Through early involvement with clients and designers a co-ordinator can make a significant contribution to reducing risks to workers during construction, and to contractors and end users of the structure, after construction.

100. Health and safety needs to be integrated into everyday management of the project – it is not a bolt-on. Appropriate time and effort invested in design and early planning will reap dividends in health and safety, whole life value (total cost of ownership) as well as improved management of the project, and increased likelihood of completing to time, cost and quality.

101. As the name indicates, a key role is to ensure that, during the design and planning stages, the work of all parts of the team is well co-ordinated, as far as health and safety is concerned and that everyone co-operates. During the construction phase they co-ordinate ongoing design work, and its implications for the construction phase plan, and preparation of the health and safety file.

102. A co-ordinator must be appointed before any design work starts, to assist and advise the client and ensure the project is set up properly. The co-ordinator can be an individual or a company. The tasks can be shared out, but this can make liaison and continuity difficult to achieve unless it is done very carefully.

Example 10

The co-ordinator noted that a design required the heads of in-situ cast pile caps to be broken down by hand, causing the team considerable exposure to noise and hand-arm vibration.

He suggested that by slightly redesigning the reinforcing steelwork and fitting it with protective sleeving before the pour, it would be possible to use either a machine-mounted concrete crusher or a hydraulic burster instead of hand-held breakers.

This suggestion was agreed with the designer and adopted, resulting in considerable time savings as well as reducing the health risk.

Competence

Regulation 4

103. Co-ordinators need good interpersonal skills and a sound working knowledge of:

- health and safety in construction work;
- the design process;
- other aspects of planning and preparing for construction work, and
- site processes

relevant to the project and future maintenance, refurbishment or demolition. The size and complexity of the project determines whether an individual is capable, and has the resources to carry out all of the work required. Chapter 7 contains further advice concerning competence.

104. Co-ordinators are not necessarily designers, and do not have to undertake any design work themselves. But in order to assess the health and safety implications, they must have sufficient knowledge of the design process to enable them to hold meaningful discussions with designers, and participate fully in relevant design team meetings.

105. Co-ordinators can't discharge their role effectively without the client's support. For that reason they often need an understanding of relevant aspects of the client's business and the implications of the proposed work for it. They need to make sure that clients understand their own role and duties as well as the benefits of good management of the project and early appointments. Co-ordinators also need to explain how they can help the client in these areas and agree exactly what their functions will be. This will depend on the nature of the project and experience and resources the client has to carry out some of the work in house, but clients must ensure that a competent person carries out all of the duties listed in Regulation 13(1).

106. Co-ordinators need the co-operation of all the other parties involved in the project, especially the designers. Although there is a legal duty on everyone involved in the project to co-operate, the skill of a co-ordinator is to encourage willing co-operation. Without it, good working relationships, clear communication and sharing of relevant information will not happen and health and safety and, of course, the whole project will suffer. An over-bureaucratic approach is to be avoided, not least because it makes it harder to gain such co-operation.

What co-ordinators must do

Regulation 8(1) and 13

107. Co-ordinators must:

a) advise and assist clients with their duties;
b) co-ordinate design work, planning and other preparation for construction, where relevant to health and safety;
c) liaise with the principal contractor about design developments during the construction phase that are likely to have implications for health and safety and the construction phase plan. Such reviews must not interfere with the principal contractor's duty to plan and manage work on site;
d) manage the flow of health and safety information between clients, designers and contractors. This includes locating existing information or advising the client how to fill significant gaps, eg by commissioning surveys; and
e) produce or update a relevant, user friendly, health and safety file suitable for future use at the end of the construction phase.

108. In addition, to deliver more effective health and safety risk management, they also normally:

a) advise clients on the competence and resources of their appointees;
b) notify HSE about the project on behalf of the client;
c) develop effective management arrangements for the project and review and revise them;
d) carry out early planning and, sometimes, preparation for the construction work; and
e) advise the client on the suitability of the construction phase plan (for the initial construction work) and welfare facilities before construction work starts.

Monitoring

Regulation 7(2)(b)(iv)

109. Monitoring is an essential part of the planning and management arrangements. The co-ordinator's particular involvement is likely to include:

a) calling design and wider team meetings as required;
b) checking the suitability of information prepared by designers for contractors;
c) checking the flow of information forming the health and safety file.

Co-ordinators and the design

Regulation 7(2) 13(2) and 15

110. Co-ordinators need to ensure that the client's management arrangements include the review of designs. This is the case even if the designer is based overseas or not available to discuss the issues. Where a number of designers are involved, co-ordinators also need to take reasonable steps to ensure that:

- design work is co-ordinated, so that:
  - design elements and designers assumptions are compatible;
  - all significant design issues are addressed;
- and designers work together to address health and safety implications of the designs, and to ensure that any problems are resolved.

111. The co-ordinator's legal responsibility only extends to health and safety aspects of the design review – checking that the requirements of regulation 14 have been addressed and that the different design elements work together. However, the benefit of design reviews is likely to be greater and more obvious if health and safety is addressed alongside practicality and cost in a wider review of the design's buildability, maintainability and usability. If there is a separate lead designer then the co-ordinator needs to agree the review process and their respective roles.

112. To be really effective, the review must draw together those with responsibility for the design, those who will construct or maintain it and, often, users and facilities management experts. (Even if the actual people, eg maintenance contractors, haven't been appointed at the time of the review, it is still useful to involve those with such expertise. They can often identify simple design changes that could make construction and maintenance easier, cheaper and safer.)

113. As part of design reviews, co-ordinators need to ensure that designs include the information needed by other designers and contractors (paragraph 169). This information needs to be clear and concise.

114. The timing of the reviews also needs to be considered. Design needs to be far enough on for people to have a clear view of what is in mind, but not so far on that it is too late to modify the proposals, if necessary. Design is an iterative process so it may need review at several different stages. As always the effort devoted to design review should be in proportion to the risks and complexity.

115. Co-ordinators who identify important health and safety issues that have not been addressed in a design must draw them to the attention of the designer.

Example 11

The co-ordinator ensured that the mechanical and electrical contractor for a multi-storey office block discussed the location of the services with the pre-cast floor contractor. This allowed the service drawings to be completed in time for service voids to be pre-formed in the pre-cast floors during the manufacturing stage.

Operatives avoided significant exposure to noise and vibration from extensive diamond drilling on site. It was also significantly quicker and cheaper.

Preparation for construction

116. Much can be done before construction actually starts to speed it up and make it safer. The co-ordinator should be able to do, or arrange such work. It may include:

- obtaining drawings from the utilities of relevant underground services, verifying and marking them out;
- arranging for water, electricity, sewage and other services to be provided to the site.

The co-ordinator's role during the construction phase

117. Design continues throughout a project and co-ordinators have a continuing role during the construction phase – ensuring that designers, including those engaged by a contractor and contractors who carry out design work themselves, co-operate with each other, and designs meet the requirements of the Regulations. Where design changes and decisions during the construction phase have significant health and safety implications, co-ordinators must liaise with the principal contractor about any implications for the construction phase plan.

118. The design of temporary works, such as falsework, formwork and scaffolding, falls within the scope of CDM^{2006}. Co-ordinators have to take reasonable steps to ensure co-operation between permanent and temporary works designers, in particular to ensure that the designs are compatible and that the permanent works can support any loadings from temporary works.

119. Co-ordinators need to pay particular attention to late designs or changes to designs, for example revisions on architects' instructions, when clients require changes or when unforeseen problems are encountered on site, to ensure that they do not result in significantly increased risks.

120. Hurriedly produced solutions to problems or other last minute changes can have tragic consequences if the implications are not identified and thought through. Co-ordinators need to

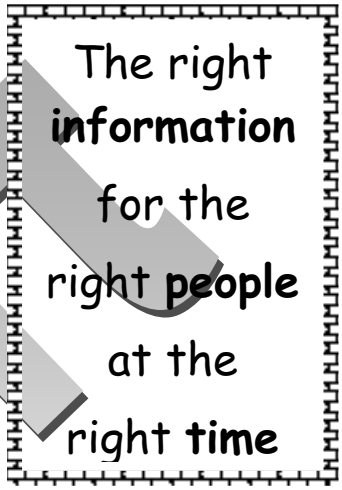
ensure that the management procedures allow low-risk design developments and alterations to be handled with minimal bureaucracy. However, design work, which is more complex and likely to involve greater risks usually needs to be discussed between the designers and contractors. An integrated team provides an excellent framework for such discussions.

Managing information flow

Regulations 10 and 13(2)

121. The co-ordinator must identify and extract the information needed by designers and contractors, but actually providing it is the client's responsibility. Co-ordinators also normally manage the flow of information between the team members. They need to determine and assemble the information needed by designers and contractors in sufficient time for them to decide what resources (including time) are required for their work and to plan and carry it out safely and without risk to health. This includes project specific information:

a) from a prior health and safety file;
b) which can reasonably be obtained from surveys and other sources including under the Control of Asbestos at Work Regulations 2002;
c) from earlier design work;
d) any client arrangements, deadlines or requirements which have significant implications for health and safety; and
e) the minimum period to be allowed between notice of mobilisation and start on site.

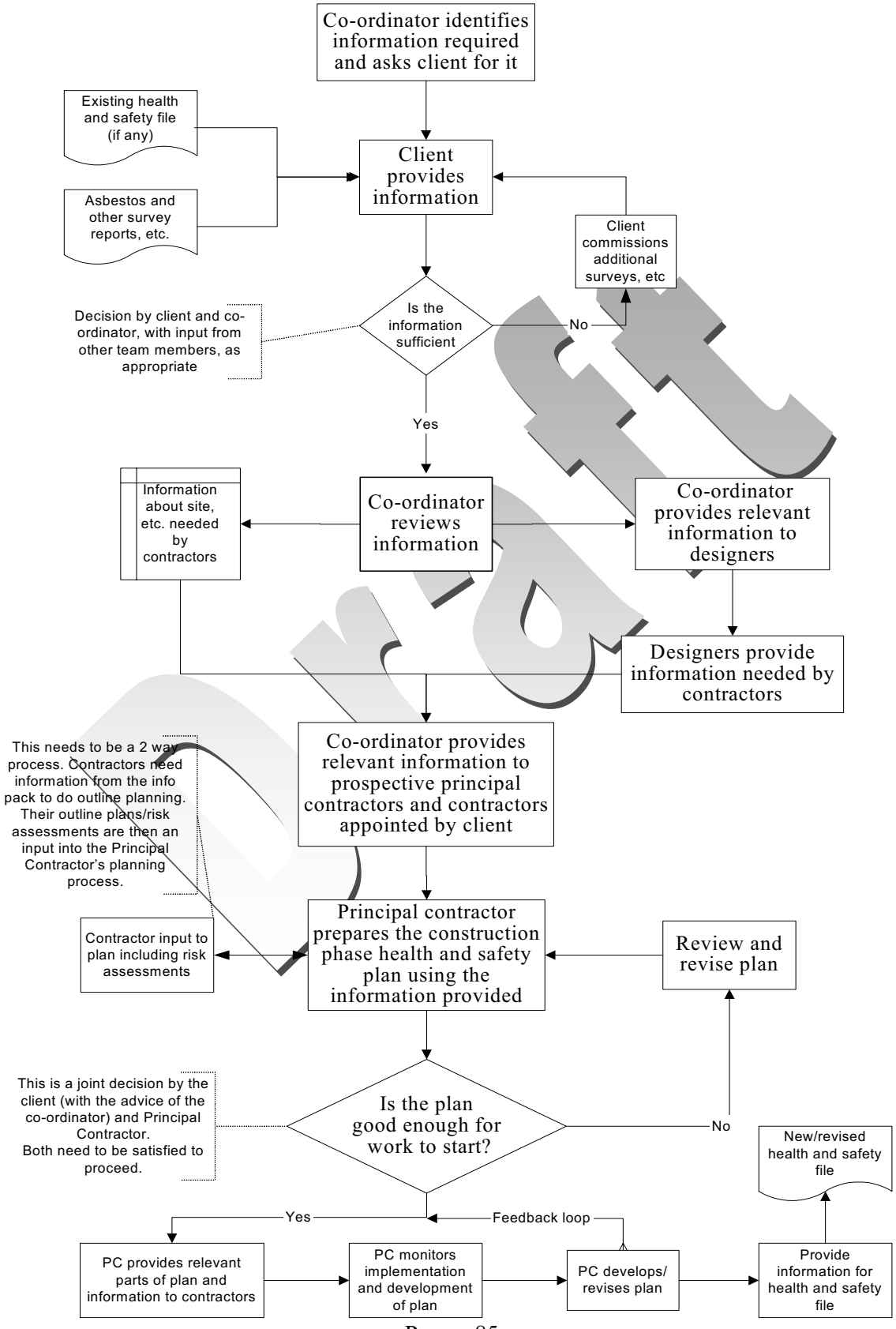


122. This information helps the co-ordinator to assess the competence and resources required by members of the project team that have still to be appointed and to advise the client accordingly.

123. Once they have received this information, co-ordinators must weed out irrelevant material and assemble the information that designers and contractors need in a clear and comprehensible format. This must be sent out in time for them to take account of it in determining the resources (including time) required for the work and in designing and planning. This information is often provided as part of the tendering process, in which case responses to the issues identified can be a real help when judging competence.

124. For convenience this information is called the *Information Pack*, but different people need different information at different times. Communicating this information properly is what counts, not assembling it in a particular format. The information which people need is basically the same as that previously included in the pre-tender health and safety plan (see Appendix 2 for more detail).

Provision of information



Health and safety file

Regulations 12 and 13

125. Co-ordinators must ensure that a suitable health and safety file is prepared or updated – if one already exists. It is important that they discuss this with the client and agree its format and who has to provide what information, when. This requires the co-operation of several dutyholders so co-ordinators need to make sure that designers and contractors know, early on, what they will have to provide.

126. Clients may need to provide incentives or include requirements in contracts to ensure that the information is given to the co-ordinator immediately after relevant design or construction work is completed. At the end of a project the co-ordinator gives the completed file to the client for safekeeping. (Chapter 10 and paragraph 270 provide more information on the health and safety file.)

Co-operation and co-ordination

Regulations 5, 7(2)(b)(iii), (vi) and 13(1)(d)

127. Co-operation and co-ordination can only be achieved if there is good communication between all parties involved in a particular aspect of a project. The co-ordinator needs to make sure that there are appropriate systems in place to encourage communication and the sharing of relevant information. **This cannot usually be achieved without visiting the site or meeting designers and other team members.** The principal contractor has a similar role during the construction phase.

128. A good way to stimulate co-operation and co-ordination, while simultaneously improving the focus of all parties on hazard identification and risk management, is the development of a project risk register. (See appendix 3.) The obvious person to lead the development of the register is the co-ordinator. A well focussed register:

- summarises the key risks that need to be addressed in design and planning;
- allocates responsibility for addressing the risks; and
- provides a framework for developing the information pack and the health and safety file.

129. Co-ordinators may need to convene special meetings if they are not satisfied there is sufficient co-operation between designers or with other team members or if adequate regard is not being given to health and safety. It is, however, generally preferable for these issues to be addressed in other routine project meetings.

What co-ordinators don't have to do

130. Co-ordinators don't have to:

a) approve the appointment of designers, principal contractors or contractors, although they normally advise clients about competence and resources;

b) approve or check designs, although they have to be satisfied that the design process addresses the need to eliminate and control risks;

c) approve the principal contractor's construction phase health and safety plan, although they have to be able to advise clients on its adequacy at the start of construction;

d) supervise the principal contractor's implementation of the construction phase health and safety plan; or

e) supervise or monitor construction work – this is the responsibility of the principal contractor and blurring or undermining this management role can be harmful

f) co-ordinate anything, except regarding health and safety. (In practice this distinction can be very blurred and it is hard, and often pointless, to draw hard and fast demarcation lines. What matters is that someone with enough time and expertise addresses all the important issues.)

Chapter 4. Designers

131. Designers are in a unique position to reduce the risks that arise during construction work, and have a key role to play in CDM[2006]. Designs develop from initial concepts through to a detailed specification, often involving different teams and people at various stages. At each stage, designers from all disciplines can make a significant contribution by identifying and eliminating hazards, and reducing likely risks from hazards where elimination is not possible.

132. Designers' earliest decisions fundamentally affect construction health and safety. These decisions influence later design choices, and considerable work may be required if it is necessary to unravel earlier decisions. It is therefore vital to address health and safety from the very start.

133. Designers' responsibilities extend beyond the construction phase of a project. They also need to consider the health and safety of those who will maintain, repair, clean, refurbish and eventually remove or demolish all or part of a structure as well as the health and safety of users of workplaces. Failure to address these issues adequately at the design stage may make it difficult to devise a safe system of work and cause additional costs because, for example, expensive scaffolding or other access equipment is needed.

134. Designers have to weigh many factors as they prepare their designs. This chapter focuses on those that have health and safety implications. These have to be weighed alongside other considerations, including cost, fitness for purpose, aesthetics, buildability, maintainability and environmental impact. CDM[2006] allow designers to take due account of other relevant design considerations. CDM does not prescribe design outcomes, nor is this a mechanistic process. Instead **designers have to weigh the various factors and reach reasoned, professional decisions.**

> *Safety is not one of a number of targets to be hit. It is not another design objective nor is it another design requirement.*
>
> *It is an integral part of everything done within a design office.*
>
> Designer

135. Designers must reduce foreseeable risks to health and safety, based on the information available when the design is prepared or modified. The greater the risk, the greater the weight that must be given to eliminating or reducing it. **Designers must not produce designs that cannot be constructed or maintained in reasonable safety** and should be able to demonstrate a safe method of construction for their designs**.**

136. Where significant risks remain when they have done what they can, designers must provide the information needed to ensure that the co-ordinator, other designers and contractors are aware of them and can take account of them. (See paragraph 169.)

Who are designers?

Regulation 2

137. In CDM[2006] the term 'designer' has a broad meaning. Designers are those who have a trade or a business which involves them in:

a) preparing designs for construction work, including variations. This includes preparing drawings, design details, specifications, bills of quantities and the specification (or prohibition) of articles and substances, as well as all the related analysis, calculations, and preparatory work; or

b) arranging for their employees or other people under their control to prepare designs relating to a structure or part of a structure.

It does not matter whether the design is recorded (eg on paper or a computer) or not (eg it is only communicated verbally).

138. Designers therefore include:

a) architects, civil and structural engineers, building surveyors, landscape architects, other consultants, manufacturers and design practices (of whatever discipline) contributing to, or having overall responsibility for, any part of the design, for example drainage engineers designing the drainage for a new development;

b) anyone who specifies or alters a design, or who specifies the use of a particular method of work or material, such as a design manager, quantity surveyor who insists on specific material or a client who stipulates a particular layout for a new building;

c) building service designers, engineering practices or others designing plant which forms part of the permanent structure (including lifts, heating, ventilation and electrical systems), for example a specialist provider of permanent fire extinguishing installations;

d) those purchasing materials where the choice has been left open, for example those purchasing building blocks and so deciding the weights that bricklayers must handle;

e) contractors carrying out design work as part of their contribution to a project, such as an engineering contractor providing design, procurement and construction management services;

f) temporary works engineers, including those designing auxiliary structures, such as formwork, formwork, falsework, façade retention schemes, scaffolding, and sheet piling;

g) interior designers, including shop-fitters who also develop the design;

h) heritage organisations who specify how work is to be done in detail, for example providing detailed requirements to stabilise existing structures; and

i) those determining how buildings and structures are altered, eg during refurbishment, where this has the potential for partial or complete collapse.

139. Designers are accountable for the health and safety implications of their own design decisions on others. They are not accountable[23] for the designs and decisions of other designers, unless such designers work within their practice or under their control. Clients, with the assistance of the co-ordinator, should make clear who does what, but if they don't, it should be discussed with the lead designer or co-ordinator.

140. Demolition often involves design work – eg temporary works and pre-weakening of structures. However, the main focus should be on planning and managing the work and the relevant duties on principal contractors and other contractors.

141. Local authority or government officials may provide advice relating to designs and relevant statutory requirements, eg building regulations, but this does not make them designers. However, if they require that particular features are included or excluded (eg stipulating hazardous substances or the absence of edge protection on flat roofs) then they are designers and must ensure that they comply with these Regulations.

What designers must do

Regulations 4, 5 and 14

142. Designers must:

a) make sure that they are competent to address the health and safety issues likely to be involved in the design;

b) check that clients are aware of their duties; ensure that, for notifiable projects, the client has appointed a co-ordinator and notified HSE and must not start design work unless they have;

c) prepare designs with adequate regard to health and safety, and the information supplied by the client, taking into account interfaces with other design elements;

[23] Except that, like everyone else involved in a project, regulation 6(2) means that designers have to point out any serious risks they identify to the lead designer, co-ordinator, principal contractor or client, as appropriate.

d) provide adequate information in or with the design;
e) co-operate with the co-ordinator, principal contractor and with any other designers or contractors as necessary for each them to comply with their duties. This includes providing any information needed for the information pack or health and safety file.

143. Under CDM[2006], designers must ensure that any designs they prepare for the purposes of construction work, avoid risks to anybody:

a) carrying out construction work;
b) cleaning or maintaining the permanent fixtures and fittings;
c) using a structure designed as a place of work;
d) demolishing or part of the structure; or
e) who may be affected by such work, for example customers or the general public.

144. Designers also have duties under other legislation, including section 3 of HSWA and the Management Regulations. Compliance with regulation 14 of CDM[2006], as set out in this Chapter, will also ensure compliance with regulation 3(1), (2) and (6) of the Management Regulations in respect of risks to those constructing the design. Designers still need to consider the implications of building regulations and fire safety requirements, as well as any duties on occupiers for completed structures.

145. Guidance on designers' duties under regulation 14 is provided in this Chapter, but designers who sub-contract design work or appoint contractors also have duties under other regulations. This includes the competence of designers or contractors that they engage. Guidance on these issues is in chapter 7.

Example 12

One project involved the installation of a large racking system. The initial proposal relied on operatives using PPE to climb the racking. After discussion it was decided to use mobile elevated work platforms instead.

There were concerns that this would increase costs, but instead it resulted in programme and cost savings. Consequently the method is to be used on similar future schemes.

The designer seems to have missed the point. He didn't attempt to remove risk, but merely suggested conventional precautions that were far too vague and generic to be useful.

HSE Inspector

When do these duties apply?

Regulation 14(3)

146. These duties apply whenever designs are prepared which may be used in construction work in the United Kingdom[24]. This includes designs prepared to obtain estimates or tenders, bid for grants and initial or outline design. It does not matter whether or not planning permission or funds have been secured; the project is notifiable or high-risk; or the client is a domestic client.

147. Designers' duties extend to modifications to designs. These need to be properly managed. Hurriedly produced solutions to problems or other last minute changes can have tragic consequences if the implications are not identified and thought through.

Competence

Regulation 4

148. All designers must be competent[25] to comply with their duties under these Regulations. This means that they must be able to:

a) identify hazards inherent in their designs and understand how they can be eliminated or the risks likely to be faced during construction or maintenance can be reduced;

[24] England, Northern Ireland, Scotland and Wales.
[25] See also chapter 7.

b) design workplaces (eg factories, offices, schools) to comply with other health and safety requirements – particularly the Workplace Regulations 1992;
c) identify remaining risks during construction, maintenance or demolition;
d) communicate information about these risks needed by contractors to comply with their duties;
e) comply with the management arrangements established for the project;
f) co-operate with the co-ordinator and the principal contractor.

149. To do this, designers need to understand how their design structure can be constructed, cleaned and maintained safely. The Safety in Design website (www.safetyindesign.org/) provides benchmarked standards for knowledge and competence for designers. The Construction Confederation also provides guidance on this www.thecc.org.uk/downloads/PreQualFlyerPDF.pdf.

150. Best practice designers have:

- a clear policy endorsed at board level on the management of health and safety;
- an established programme for health and safety training and Continuing Professional Development;
- a system to demonstrate that design staff have a good understanding of the construction process and a working knowledge of key health and safety guidance;
- hazard and risk information in their practice library concerning products regularly used or specified;
- established systems for design risk reviews at key stages of the design process;[26]
- lists of products and processes (eg green / amber / red) which they wish to encourage / discourage or even ban from their designs and specifications.

Think health & safety at:

- ✓ Overall concept
- ✓ Temporary/permanent works
- ✓ Detail design
- ✓ Construction sequence/method
- ✓ Materials to be used
- ✓ Workplace use (and abuse!)
- ✓ Requirements upon the construction team

ie ALWAYS

Making clients aware of their responsibilities

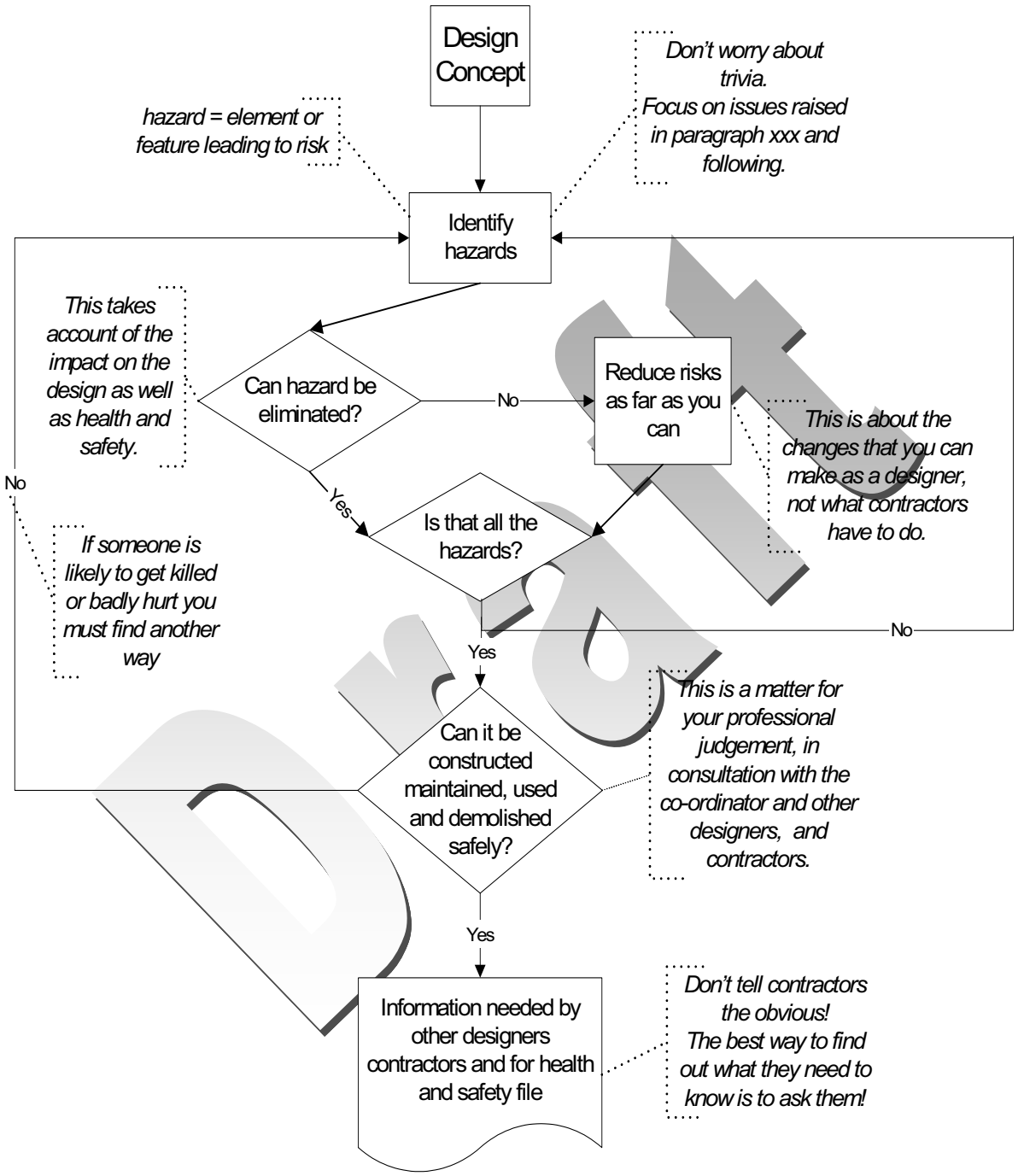
(Notifiable projects only)

Regulation 14(1)(a)

151. Designers are often the first point of contact for a client, and CDM2006 requires them to check that clients are aware of their duties under the Regulations. For a notifiable project, designers need to ensure that a co-ordinator has been appointed and HSE has been notified about the project. If they have, then designers can normally take it that the client is aware of their duties.

[26] This review may include *normal* checking of safety critical aspects of designs and verification of critical design assumptions – eg where the safety of supports relies on particular design assumptions about ground conditions. (See also paragraphs 45(d) and 110.)

Designing for health and safety



152. In other cases designers should draw the client's attention to the need to appoint a co-ordinator before design work begins. This Document, in particular chapters 1 and 2, the HSE information sheet for clients[27] and the leaflet produced by the Construction Clients Group (CCG)[28] may also be helpful. This duty is aimed at the designer who has the initial or main contact with the client. Other designers need take no action unless they have reason to suspect that clients are not aware of their duties.

Example 13

A designer considered the use of a water-based paint for the exterior of a metal spire on a tall building to reduce exposure to solvents.

She determined that the level of exposure to solvents from a solvent-based paint would be low, and the metalwork would require more frequent repainting with a water-based paint.

She therefore concluded that it was better to specify the solvent-based paint because of the high risk of frequent working at height.

Preparing a design

Regulation 14(2), (3) and (4)

153. Designers must critically assess their design proposals at an early stage, and then throughout the design process, to ensure that health and safety issues are identified, integrated into the overall design process and addressed as they go. **It is pointless to complete the design and then do a risk assessment.** By then, all of the key decisions are likely to have been taken and no one will be willing to make any changes because of the time and cost involved.

154. The first thing that designers have to do is to eliminate hazards – things which might result in injury or ill health – from their designs. Design decisions, features and specified articles, substances, plant and machinery introduce these hazards. Eliminating them completely removes the associated risk. This is therefore the best option and should always be the first choice. However, it is not always practical and it is pointless to design out one hazard, only to introduce others that increase the overall risk.

Design risk reduction hierarchy

Eliminate

Reduce

Inform

155. Where hazards can't be eliminated completely designers must take appropriate action, in the design, to limit the likely risk by reducing the:

- likelihood of harm (injury or adverse health effect);
- potential severity of the harm;
- number of people exposed to harm; and
- frequency or duration of exposure to harm

during the construction phase.

156. **The priority given to eliminating hazards and reducing risks depends on the degree of risk**, and must be performed so far as is reasonably practicable, taking due account of other relevant design considerations.[29] If, however, a hazard can be easily eliminated, without adverse consequences to the design, it should be eliminated even if the reduction in risk is marginal.

157. In most cases it is sufficient to approach this using experience and published guidance, without sophisticated risk analysis techniques. There is little to be gained by detailed comparison of construction techniques that present similar risks, for example whether to specify a steel frame or concrete portal building. The focus should be on issues that are known to have the potential to reduce risks significantly and those which reduce the risks to everyone exposed.

158. Finally, designers must provide the information necessary to identify and manage the remaining risks. **This must be project specific. Generic risk information is pointless.**

---

[27] This can be obtained from www.hse.gov.uk/
[28] This can be obtained from [not written yet!]
[29] See paragraph 134.

159. Designers also need to design fixed workplaces (eg factories, offices, schools) to comply with other health and safety requirements – mainly the Workplace Regulations 1992. This includes taking account of risks during the use of the workplace, private roadways and pedestrian routes, or cleaning or maintenance of permanent fixtures and fittings arising from their design.

160. The best way to identify and address risks during construction, maintenance and demolition is to involve all those with key roles in the design process from the outset of the project. This helps designers to identify and take account of likely construction processes for their design. A risk register provides a useful framework for this process as it draws on the expertise of the whole team and allows issues of buildability and maintainability to be addressed at the same time. The co-ordinator is in a good position to lead in the development of the register.

161. Good design practice, as set out above and taken with the following practical suggestions, will not only reduce the risks that people face, but can also deliver substantial cost savings through reduced construction and maintenance costs throughout the lifetime of the structure.

Example 14

A fractionation column on a catalytic cracking plant was designed so that it could be assembled horizontally, at ground level, scaffolded and then lifted into a vertical position. This substantially reduced the risk of falls.

162. At the end of this process **the design must be one that can be constructed safely. Significant risks of death or serious personal injury, including to health, are not acceptable on any grounds.** A team approach, taking advantage of the practical knowledge that contractors and others have, helps to make sure designs are safe and efficient to construct.

163. For temporary works 'standard' design solutions that comply with recognised codes of practice, eg for scaffolding or falsework, are often used. Such solutions are normally satisfactory. However, where such solutions are adapted the designer needs to consider carefully whether the risk is still effectively controlled.

Example 15

A landscaping contractor provided scaled drawings of flat garden areas which were surrounded by concrete kerb stones. This enabled the ground-work sub-contractor to calculate the number of kerb stones and arrange for all cutting to size to be done off-site under controlled conditions reducing the amount of silica dust released.

164. A range of practical guidance on risk reduction for designers is available; some examples are listed in appendix 6.

What designers can do

165. This section identifies some areas over which designers have direct influence. They cover construction as well as future maintenance and cleaning requirements. This is not an exhaustive list, nor is each item relevant to every project. Designers should, where possible:

Example 16

During the construction of a multi-storey office block the design sequence required the stairways to be installed progressively, as the floors were completed. This provided much quicker and safer access for people and materials than ladders.

a) select the position and design of structures to avoid risks from site hazards;
b) design out health hazards by specifying less hazardous materials and avoiding processes that create hazardous fumes, vapours, dust, noise or vibration;
c) specify materials that are easy to handle, or design to facilitate mechanical handling;
d) design so that permanent access equipment is installed early and can be used during construction;
e) **not** specify flat roofs without edge protection, fragile roofing materials, deep or long excavations, or materials that create a significant fire risk;

f) use prefabrication to minimise hazardous work, or to allow it to be carried out in more controlled conditions off-site; and

g) design to aid safe construction, eg by providing:
   - anchorage points for scaffolding, nets or fall arrest systems;
   - lifting points and marking the weight, and centre of gravity of heavy or awkward items;
   - joints in vertical structural steel members that can be bolted easily by someone standing on a permanent floor, and for horizontal members by the use of seating angles to provide support while the bolts are put in place.

166. Design to make future maintenance and cleaning work, safer by:

a) eliminating the need to work at height, eg by:
   - specifying windows that can be cleaned from the inside;
   - specifying low maintenance products, eg those that don't need painting;

b) designing in safe permanent access, eg for:
   - design plant rooms to allow safe access to and around plant, not forgetting its removal and replacement;
   - roof-mounted plant, and roof maintenance;
   - painting and maintenance of facades;

c) allowing for safe temporary access to fixtures and fittings, eg ventilation ducts and lighting fixtures. Eg locate them where temporary access equipment can be used safely, not where this is difficult –such as above stairs.

167. Designers need to understand how their design can be constructed, cleaned and maintained safely. This involves:

a) taking full account of the risks that can arise during the proposed construction processes, giving particular attention to new or unfamiliar processes, and to those that may place large numbers of people at risk;

b) considering the stability of partially erected structures and, where necessary, providing information to show maximum erection loads and how temporary stability could be achieved during construction;

c) considering the effect of proposed work on the integrity of existing structures, particularly during refurbishment and where foundations are to be dug close to existing buildings;

d) ensuring that the overall design takes full account of any temporary works, for example space and structural support for falsework, which may be needed, no matter who is to develop those works;

e) ensuring that there are suitable arrangements (for example access and hard standing) for cranes, and other heavy equipment, if required.

168. Occupied buildings or sites and refurbishment present special risks that can often be avoided or reduced if the issues are identified and addressed at the design stage. Work such as underpinning and creating openings can

Example 17

The original ground plan of the proposed structure was along a busy main road. This left no clear route for deliveries unless a partial road closure was instigated. The design was reviewed and the footprint of the building moved by 5 metres. This improved the safety of deliveries and off-loading operations and reduced disruption to the surrounding area.

Example 18

A client wanted a glass atrium in a shopping precinct. The designer was aware of the high risk of people falling through such fragile materials, and so tried to find a suitable alternative. He was unsuccessful in this and so he designed in suitable access equipment to enable safe construction, maintenance and cleaning — inside and out.

Example 19

Lights were installed over a swimming pool.

The pool had to be drained and tower scaffolding erected to change any bulbs.

Example 20

In preparing the drainage layout for a fast track project the drainage lines were arranged so that the drains could be laid without preventing access for the use of mobile elevating work platforms that had been chosen to provide safe access for the erection of the structural steelwork.

threaten the stability of structures by substantially weakening them or because of faults in the original construction, or subsequent work.

Providing information

Regulation 14(5)

169. Designers must provide adequate information about aspects of the design of a structure, its construction or maintenance needed by contractors and other designers. They should include key assumptions about working methods or precautions. This information forms part of the information pack[30]. Designers also need to provide information about aspects of the design that could create risks during future construction work or maintenance for the health and safety file. If in doubt about the level of information needed, the best way to find out is to ask those who will use it.

170. Designers must provide information about significant hazards; not spell out all hazards and assumptions. Significant issues must be flagged up, not obscured. To know what is significant designers must understand how their design can be built. **Significant hazards are not necessarily those that involve the greatest risks, but those, including health risks that are:**

- **not likely to be obvious to a competent contractor or other designers;**
- **unusual; or**
- **likely to be difficult to manage effectively.**

Example 21

A designer considered using augered piles for a scheme to be built on contaminated land. He recognised that workers could be exposed to a toxic hazard. As a raft foundation was not viable from an engineering viewpoint, driven piles were specified. However, if augered piles had been the only reasonably practicable solution, the designer would have needed to include the possibility of exposure to toxic substances in information for the information pack.

171. **Designers always need to provide information regarding**, for example:

a) hazards that could cause multiple fatalities to the public, such as tunnelling, or the use of a crane close to a busy public place, major road or railway;
b) temporary works, required to ensure stability during the construction, alteration or demolition of the whole or any part of the structure, eg bracing during construction of steel or concrete frame buildings or removal of critical load-bearing components;
c) hazardous or flammable substances specified in the design, eg epoxy grouts, fungicidal paints, or those containing isocyanates;
d) features of the design and sequences of assembly or disassembly that are crucial to safe working. This includes hazards during demolition, for example:
   - sources of substantial stored energy, including pre- or post-tensioned members;
   - unusual stability concepts;
   - alterations that have changed the structure;
e) specific problems and possible solutions, for example features provided to enable the removal of a large item of plant from the basement of a building;
f) structures that create particular access problems, such as domed glass structures;
g) heavy or awkward prefabricated elements likely to create risks in handling; and
h) areas needing access where normal methods of tying scaffolds may not be feasible, such as facades that have no opening windows and cannot be drilled.

[30] See paragraph 121.

172. **Information should be brief, clear, precise**, and in a form suitable for the users. This can be achieved using:

- **notes on drawings** — this is preferred, since the notes have to be brief and are immediately available to those carrying out the work. They can refer to other documents if more detail is needed, and be annotated to keep them up to date;
- **a risk register** – see appendix 3;
- **suggested construction sequences** showing how the design could be erected safely, where this is not obvious, for example suggested sequences for putting up stressed skin roofs. Contractors may then adopt this method or develop their own approach.

173. It may be useful to split this information into two parts, depending on whether it is relevant to:

- other designers and contractors in the short term; or
- future maintenance and construction work and so required for the health and safety file.

Example 22

A structural engineering consultancy was engaged to provide detailed design drawings for the steelwork to be incorporated in a complex alteration to an existing structure. The company recognised that many of the structural steel elements were of different lengths and the site layout meant that it would be difficult to lift the beams into position during assembly. The structural engineer ensured that simple lifting brackets were designed into each structural steel element, and that the lifting points were marked on the design drawings. This reduced the likelihood of error on site and the time taken for installation of the steel was reduced by a third.

Co-operation

Regulation 5

174. Designers must co-operate with the client, co-ordinator, other designers and contractors, including those designing temporary works. This is to ensure incompatibilities between designs are identified and resolved as early as possible, and that the right information is provided for the information pack and health and safety file.

175. Co-operation can be encouraged by:

a) setting up an integrated team involving the co-ordinator, designers, principal contractor and other relevant contractors;
b) the appointment of a lead designer, where many designers are involved; (see paragraph 61);
c) agreeing a common approach to risk reduction during design;
d) regular meetings of all the design team (including the co-ordinator) with contractors, and others;
e) regular reviews of developing designs;
f) joint meetings to review designs, where there is a shared interest in an issue;
g) site visits.

Design of components

176. Manufacturers supplying standardised products that can be used in any project are not designers under CDM^{2006}, although they may have duties under supply legislation. The person who selects the product is a designer and must take account of health and safety issues arising from its use. If a product is purpose-made for a project, the person who prepares the specification is a designer under CDM^{2006}, and so is the manufacturer who develops the detailed design.

What designers don't have to do

177. Under CDM^{2006}, designers don't have to:

a) take into account or provide information about unforeseeable hazards and risks;
b) design for possible future uses of structures that cannot reasonably be anticipated from their design brief;

c) specify construction methods, except where the design assumes or requires a particular construction or erection sequence, or where a competent contractor might need such information;

d) exercise any health and safety management function over contractors or others; or

e) worry about trivial risks.

178. Designers are not legally required to keep records of the process through which they achieve a safe design, commonly known as the Design Risk Assessment (DRA). This has led to the production of large amounts of paperwork listing generic hazards and risks, most of which are well known to the contractors and are not significant in any sense.

179. While paperwork should not be produced unless it is useful, brief records of the points considered, the conclusions reached, and the basis for those conclusions, can be very helpful when designs are passed from one designer to another. Such records also help detail designers to understand the rationale for previous decisions, and the implications for their work. If such decisions are not recorded it is more difficult and expensive to make design changes. Good records can also help to demonstrate that designers have exercised reasonable professional judgement in matters covered with CDM^{2006}.

Chapter 5. The principal contractor

(Notifiable projects only)

180. Good management of health and safety on site, in practice – not just in theory, is crucial to the successful delivery of a construction project. The distinctive and key duty of principal contractors is to properly plan and manage the construction phase as far as health and safety is concerned. CDM[2006] provides a framework for this process.

181. Principal contractors are usually the main or managing contractor. This allows the management of health and safety to be incorporated into the normal management of the project. This is good business practice as well as being helpful for health and safety purposes.

What principal contractors must do

Regulations 4, 5 and 16 to 18

182. Principal contractors must:

a) satisfy themselves that clients are aware of their duties[31], that a co-ordinator has been appointed and HSE notified before they start work;

b) make sure that they are competent to address the health and safety issues likely to be involved in the management of the construction phase;

c) ensure that the construction phase is properly planned, managed and monitored, with adequately resourced, competent site management appropriate to the risk and activity. With:
   - a full-time manager or supervisor on site except for the smallest and simplest, lowest risk projects;
   - a manager or other representative visiting low risk sites every working day;

   to ensure safe working and co-ordination and co-operation between contractors.

d) ensure that a suitable construction phase health and safety plan ('*the plan*') is:
   - prepared before construction work begins;
   - developed in discussion with, and communicated to, contractors affected by it;
   - implemented; and
   - kept up to date as the project progresses;

e) satisfy themselves that the designers and contractors that they engage[32] are competent and adequately resourced (chapter 7);

f) ensure suitable[33] welfare facilities are provided from the start of the construction phase;

g) take reasonable steps to prevent unauthorised access to the site;

h) prepare and enforce any necessary site rules;

i) provide (copies of or access to) relevant parts of the plan and other information to contractors, including the self-employed, in time for them to plan their work – **not after they start work**;

j) liaise with the co-ordinator on design carried out during the construction phase, including design by specialist contractors, and its implications for the plan;

k) provide the co-ordinator promptly with any information relevant to the health and safety file (chapter 10);

l) ensure that all the workers have been provided with suitable health and safety induction, information and training (chapter 8);

m) ensure that the workforce is consulted about health and safety matters (chapter 9);

---

[31] It is normally enough to have a copy of the notification to HSE showing that a co-ordinator has been appointed. Nothing more is needed unless there is reason to think that clients don't understand their duties. (Regulation 19(1))

[32] Clients are responsible for the competence and resources of designers and contractors they appoint directly.

[33] They must meet the standards set out in Schedule 2 to the Regulations.

n) display the project notification.

Competence

183. To manage projects properly principal contractors need to understand the work processes involved and their health and safety implications to:

- anticipate the type and extent of risks;
- gauge the resources needed to deal with them;
- assess whether contractors' proposals are practical and appropriate;
- develop and implement the plan;
- recognise and effectively deal with poor co-operation or conflict; and
- provide effective leadership in developing and implementing the construction phase plan

for the particular project.

184. Clients need to take reasonable steps to ensure that the chosen candidate has these practical skills in managing construction projects. Candidates without experience of managing similar construction work should normally be ruled out. As the risk, size and complexity of construction projects increases the previous practical experience of the principal contractor's management team becomes progressively more significant.

Planning and managing health and safety in the construction phase

Regulation 16(1)(a)

185. Principal contractors must plan and manage the construction phase taking account of the information contained in the information pack and that provided by contractors. **The effort devoted to planning and managing a project should be in proportion to the risk and complexity involved.** For example demolition work normally needs meticulous planning and management to ensure that lives are not put at risk, but painting a house does not — as long as the risk of falls is properly addressed.

186. Under regulation 3 of the Management Regulations the principal contractor and other contractors must identify the hazards and assess the risks related to their work, including the risks they may create for others. Using this information and applying the principles of prevention (Schedule 1 of the Management Regulations) the principal contractor, in discussion with the contractors involved, must plan and manage the construction phase. This includes supervising and monitoring work to ensure that it is done safely and that it is safe for new activities to begin.

187. Where the project involves high risk-work, for example alterations that could result in structural collapse, or work on contaminated land, specialist advice is likely to be needed at the planning stage. This will often involve surveys by structural engineers, occupational hygienists, or other specialists.

The plan

Regulation 17

188. The way in which the construction phase will be managed and the key health and safety issues for the particular project must be set out in writing in *the plan*. This plan needs to be seen as an aid to management, not an end in itself. It is best if it forms part of any other construction plan, so that health and safety is treated as an integral part of normal management of the project. It is crucial that all relevant parties are involved and co-operate in the development and implementation of the plan as work progresses.

189. Although written plans are only legally required for notifiable projects[34], all projects must be properly planned and managed and the principles are always relevant.

190. To provide a basis for safe construction the plan must clearly explain the action needed to control key risks, and provide details of good working practice. The plan also needs to incorporate, or refer to, any required procedures, safety rules and monitoring arrangements.

191. **The plan must be tailored to the particular project.** The amount of detail needed depends on the nature and complexity of the project. It should be well focused, clear and easy for contractors and others to understand – emphasising key points and avoiding irrelevant material. **Long, generic plans that nobody reads or uses are a waste of effort.** Photographs and sketches can greatly simplify and shorten explanations. It should also be organised so that relevant sections can easily be made available to designers and contractors.

192. Often the design and preparation for later work is not complete at the start of the construction phase. Nevertheless, the plan for the initial phase of the construction work must be prepared before any work begins. The parts of the plan relating to such work need to be developed as information becomes available in liaison with the co-ordinator.

193. The topics that need to be addressed when developing the construction phase plan are shown at appendix 2. Where other available documents address these issues appropriately, the plan may refer to them; the information does not need to be repeated.

Implementing and monitoring the plan

Regulation 16(1)(a)

194. A plan is no use if it is treated as merely a paper exercise and gathers dust. To improve standards, it must be a practical aid to the management of health and safety on site. Principal contractors and other contractors have a particular role in both implementing and monitoring the plan to ensure that it works in practice.

195. Principal contractors must take reasonable steps to make sure their plan is implemented throughout the construction phase. This includes having monitoring arrangements, which need to be discussed with the client as they form part of the management of the project arrangements. The purpose of monitoring is to ensure that the precautions described in the construction phase plan are appropriate and followed in practice. Where contractors do not work safely or comply with the plan, principal contractors must take appropriate action to deal with the risk. (They can give reasonable directions to any contractor and contractors have to comply – regulation 16(1)(f))

196. The plan needs to be routinely reviewed, revised and refined by the principal contractor as the project develops. For example, where the plan is not being followed, and health and safety is put at risk, those involved must take appropriate action to deal with the risk. Monitoring may show the plan has shortcomings and needs to be modified. Any significant changes in the plan should be brought to the attention of all those affected.

Communication and co-operation

Regulation 5

197. Contractors must co-operate with each other, designers and others involved in the project so that all can comply with their legal obligations. Co-operation is essential, particularly on multi-contractor sites, if healthy and safe working conditions are to be achieved. Principal contractors must take the lead and actively encourage co-operation between contractors from an early stage.

[34] Schedule 3, paragraph 4 also requires the system of work to be written out for demolition work, even if it is not part of a notifiable project.

198. Practical ways to do this include regular:

a) Discussion of site health and safety issues with all contractors. This should begin before work starts, involving them as the plan is developed, and as part of regular site meetings once work is under way. It is important that such discussions give contractors ownership of relevant parts of the plan and encourage them to monitor and review their own health and safety arrangements, rather than relying solely on the oversight of the principal contractor.

b) Review of the health and safety plan to ensure that it is relevant, practical and up to date. Principal contractors need to ensure that other contractors provide the information to enable them to do this. In turn, they need to provide information to enable contractors to manage their work safely. Such information exchanges should form part of any regular site meetings.

c) Discussion of planned work to identify where the work sequence is crucial or where one contractor's work may adversely affect others, for example excavations beneath scaffolding, roofers working above bricklayers or demolition and most other work.

199. Good, timely communication is essential to co-operation and risk control. Information about risks and precautions needs to be shared sensibly (ie relevant information, not everything) when it is needed to plan and manage work. This can be done by, for example:

a) drawings that highlight hazards or unusual work sequences identified by designers, with advice on where to find more information, if required;

b) the relevant parts of the plan;

c) induction training and toolbox talks to ensure workers understand the risks and precautions;

d) providing a leaflet explaining the site rules that can be given to everyone at the induction training;

e) making the plan available to workers and their representatives.

200. Much design work is carried out by or for contractors after construction work has started. Principal contractors should encourage such designers, working during the construction phase to discuss their proposals with the co-ordinator and each other at an early stage to ensure compatibility.

Example 23

On a busy construction site employing several contractors, the key details of the construction phase health and safety plan were transferred to a wall chart and displayed in the site office and in the canteen. This enabled all visitors and workers on site to find relevant information quickly and easily. The chart was reviewed on a weekly basis and any necessary revisions made.

Example 24

New chemical processing plant was being installed in a factory. The clients had included requirements in relation to the safety of their workforce and plant in the pre-tender plan. The plan included details of those parts of the site the client would continue to occupy, information about the permit to work system, emergency procedures and traffic management arrangements. Regular meetings were held to ensure good communication and co-ordination.

201. In addition to promoting co-operation and communication with and between contractors, principal contractors also need to include clients, designers and others affected by the work.

Rules

Regulation 16(1)(c)

202. Principal contractors must include any necessary rules for the management of construction work in the health and safety plan, which others on the site have to follow. These may cover issues such as restricted areas, permit-to-work systems, hot-work and emergency plans. In some cases they are needed to reflect the requirements of clients. Any rules must be:

- set out in the plan in writing;
- understandable to those who have to follow them;
- brought to the attention of everyone who has to follow them;
- enforced.

Controlling access onto sites

Regulation 16(1)(l)

203. A principal contractor must take reasonable steps to prevent access by unauthorised persons to the construction site. Only people who are explicitly authorised, individually or collectively, by the principal contractor, should be allowed access. The authorisation may cover the whole site or be restricted to certain areas. HSE Inspectors, and others who have statutory powers to enter the site, should be treated as authorised people. Authorised people should have relevant site rules explained to them and undertake any necessary induction training. Some authorised visitors may need to be supervised while on site or visiting specific areas.

204. How access is controlled depends on the nature of the project, the risks and location. The boundaries of all sites should be physically defined, where practical, by suitable fencing.[35] The type of fencing should reflect the nature of the site and its surroundings. Special consideration is needed where:

- rights of way cross sites;
- sites are in, or next to, other work areas;
- new houses are being built on a development where some houses are already occupied; or
- there are children or other vulnerable people nearby.

205. The effectiveness of the arrangements needs to be reviewed in the light of experience. In particular, their adequacy should be carefully reviewed if there is evidence of children playing on, or near the site.

Example 25

A site compound was set up near the site entrance. This meant that every person who entered or left the site had to pass through the welfare facilities, where a register was kept listing all those who entered or left the site.

Display of notification to HSE

Regulation 16(1)(k)

206. The principal contractor must display a legible copy of the most up to date information notified to HSE where it can be read by people working on the site.

Example 26

In addition to a site-specific safety induction, every worker who entered the site was provided with a small pocket card detailing the site health and safety rules. Any new rules introduced as a result of work being carried out on the site were clearly displayed at the site entrance and the cards were reprinted and re-issued.

Training and information

Regulation 16(2)

207. Training is vital to securing health and safety on site. The principal contractor has to ensure so far as is reasonably practicable that every worker has:

- a suitable induction; and
- any further information and training needed for the particular work.

But this does not mean that the principal contractor has to train everyone on the site!

[35] For more information, read HSG151 *Protecting the public: Your next move.*

How many principal contractors can there be for each project?

Regulation 8(2)

208. There can only be one principal contractor for a project at any one time. However, sometimes two or more projects take place on a site at the same time. This can occur if different clients commission adjacent work, or if a client procures two truly independent, unrelated packages of work which do not rely upon one another for their viability or completion.

209. Where overlapping projects are running on a single construction site, it is best to appoint one principal contractor for them all. If this is not done, all the principal contractors must co-operate, and their plans must take account of the interfaces — eg in traffic management. The requirements of regulations 8, 9 and 11 of the Management Regulations are also relevant.

Example 27

A principal contractor was awarded a contract to build a retail park. The individual units were handed over to the tenants on practical completion of the unit. The tenants then appointed their own principal contractors to fit out the units as separate projects.

The tenants were informed of the need to liaise with the principal contractor for the retail park, where necessary complying with the health and safety plan.

What principal contractors don't have to do

210. Principal contractors don't have to:

- provide training (apart from any induction) for workers that they do not employ[36];
- undertake detailed supervision of contractors' work.

[36] Genuinely self-employed workers are responsible for their own training, but people working under the control of others are usually their employees for health and safety purposes, even if they are treated as self-employed for other purposes.

Chapter 6. Contractors and the self-employed

211. Each year many people die or are injured as a result of inadequate attention to health and safety during construction work. Even more suffer ill health. Contractors and their employees, those actually doing the construction work, are most at risk of injury and ill health. They have a key role to play, in co-operation with the principal contractor, in planning and managing the work to ensure health and safety.

212. All contractors (including utilities, specialist contractors, contractors nominated by the client and the self-employed) have a part to play in ensuring that the site is a safe place to work. The key to this is communication and co-operation between all those involved. In addition to their duties under CDM[2006], it is important that contractors understand and comply with other relevant health and safety law. Appendix 5 summarises some of the most relevant requirements.

213. Anyone who directly employs, engages construction workers, controls or manages construction work is a contractor for the purposes of these Regulations[37]. This includes companies that use their own workforce to do construction work to their own premises. The duties on contractors apply whether the workers are employees or self-employed, without distinction.

What contractors must do

Regulations 4, 5, 19 and 20

214. For all projects contractors must:

a) plan manage and monitor their own work (taking account of risk assessments carried out under the Management Regulations or COSHH, etc.) to make sure that their workers are safe from the start of their work on site;

b) satisfy themselves that they and anyone they employ or engage are competent and adequately resourced;

c) check clients are aware of their duties[38];

d) provide their workers (whether employed or self-employed) with any necessary information, including about relevant aspects of other contractors' work, and site induction (where not provided by a principal contractor) which they need to work safely, to report problems or to respond appropriately in an emergency;

e) ensure that any design work they do complies with regulation 14;

f) comply with any requirements listed in Schedules 2 and 3 to these Regulations that apply to their work;

g) co-operate with others working on the project; and

h) obtain specialist advice (eg from a structural engineer or occupational hygienist) where necessary when planning high risk-work – eg alterations that could result in structural collapse or construction on contaminated land.

215. In the case of notifiable projects (see para 24) contractors must also:

a) check that a co-ordinator has been appointed and HSE notified before they start work;[39]

b) co-operate with the principal contractor, co-ordinator and others working on the project;

c) tell the principal contractor about risks to others created by their work;

---

[37] See Regulation 2.

[38] This is really aimed at the contractor or designer who first has contact with a client, other than a domestic client . Other contractors need take no action unless they have reason to suspect that the client is not aware of their duties. Giving them a copy of the CCG leaflet for clients or the HSE client's information sheet will be sufficient for most non-notifiable projects. If a co-ordinator and a principal contractor have been appointed then contractors can normally assume that the client is aware of their duties.

[39] Having a copy of the notification of the project to HSE (form 10) with the appointments detailed in it is normally sufficient.

d) comply with any reasonable directions from the principal contractor, and with any relevant rules in the health and safety plan;
e) inform the principal contractor of any problems with the plan or risks identified during their work that have significant implications for the management of the project;
f) tell the principal contractor about accidents and dangerous occurrences;
g) provide information for the health and safety file (chapter 10);
h) provide information and training to their employees (chapter 8).

216. Where contractors are involved in design work, including for temporary works, they also have duties as designers. See chapter 4

Competence

Regulation 4

217. Contractors need to make sure that they, and any sub-contractors they engage, are competent to carry out the proposed work safely and that all of their managers, supervisors and other workers are properly trained. This is particularly important when high-risk work (see paragraph 30) is involved and contractors are only likely to be competent if their team has previous experience of similar work. Possession of relevant specialist qualifications (eg the Demolition Operatives Scheme[40]) and membership of a relevant specialist trade association are also good indicators of competence. Additional general guidance is contained in chapter 7.

Information (notifiable projects only)

Regulation 19(1) and (5)(a)

218. Contractors must not start work on a construction site until they have been provided with basic information. This must include the names of the co-ordinator and principal contractor, and the relevant parts of the health and safety plan.

219. Contractors must promptly inform the principal contractor about risks to other site workers or members of the public resulting from their work. This includes anything, for example from risk assessments and written systems of work, which might justify a review or update of the health and safety plan.

Planning and managing

Regulation 19(2)

220. All too often injuries and ill health are the result of the failure to:

- identify the risks involved;
- plan a safe method of work;
- manage, supervise and monitor the work;

221. **It is not sufficient to simply allow workers to just get on and do the job as they see fit**. Contractors, therefore, **always** have to plan, manage supervise and monitor their own work and that of their workers to ensure that it is carried out safely and that health risks are also addressed. As always the effort invested should reflect the risk involved and the experience and track record of the workers involved. They must also ensure that they comply with the requirements in Schedules 2 and 3 of the Regulations. Where contractors identify unsafe practices, they must take appropriate action to ensure health and safety.

222. In the case of notifiable projects contractors must also co-operate with the principal contractor in the development of the construction phase plan and then implement relevant parts. This does not mean abdicating management responsibility to the principal contractor. They still

[40] http://www.citb.org.uk/demolition-training/record_scheme/default.asp

have to supervise and monitor the their work against the plan. Where this identifies shortcomings in the plan, the contractor should inform the principal contractor.

223. If one contractor is overseeing the work for a domestic client then they should ensure that the work of the various contractors is properly co-ordinated. But, whether or not one contractor takes the lead, all must manage their own work and co-operate with one another to ensure that the site is safe.

Reporting incidents

Regulation 19(5)(c)

224. The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR) require the 'responsible person' to notify any death, reportable injury, disease or dangerous occurrence to the relevant enforcing authority. The responsible person is the employer or, for the self-employed, the contractor or principal contractor.

225. Contractors must provide full information about RIDDOR incidents to principal contractors so that they can monitor compliance with health and safety law and, if necessary, review the arrangements for the management of health and safety. The health and safety plan should cover reporting of 'near miss' incidents and incident investigation.

Chapter 7. Competence and resources[41]

226. This Chapter provides general advice about assessing the competence and resources of those engaged or appointed under CDM[2006] – co-ordinators, designers, principal contractors, and contractors. The training and competence of individuals is addressed in the following chapter. There is also specific advice on the competence of particular dutyholders in relevant chapters.

227. It is in everyone's interest to ensure that those with duties under CDM[2006] are competent and adequately resourced to do their jobs properly, manage risks and avoid delays. To be competent, an organisation or individual must have sufficient experience, knowledge and other skills to carry out their duties satisfactorily. This includes management skills, where appropriate. While checking on quality, financial viability, etc., little additional effort is required to ensure that the organisation or individual is also competent and has sufficient resources to carry out their work safely. Dealing with all of these issues together works best. Assessments should focus on the needs of the particular project and be proportionate to the risks, size and complexity of the work.

What you must do

Regulation 4

228. All those with duties under CDM[2006] must satisfy themselves that businesses that they engage or appoint are competent. This means making reasonable enquiries to check that the organisation or individual is competent to do the relevant work and can allocate adequate resources to it. People appointed must also be sure that they are competent to carry out the required tasks.

229. Co-ordinators should be in a position to advise clients about competence of designers and contractors. Clients should ask for this advice, unless they have enough expertise in construction and health and safety to make the assessments themselves.

Principles

230. Assessment of competence and resources needs to take place before each appointment is made. The following principles underpin such assessments:

a) the competence and resource requirements under CDM[2006] relate only to health and safety purposes but, in practice, it makes much more sense to check all aspects of competence needed to do the work together;
b) the level of competence must be adequate:
   - for the actual needs of the project being planned; and to
   - enable the appointee to comply with duties under these and other relevant legislation;
c) enquiries should be proportionate, well targeted and not repeat checks carried out for recent, similar work;
d) in most cases, demonstration of a successful track record of managing and carrying out similar work should be sufficient indication; and
e) for simple, low-risk projects, minimal checks are needed.

231. Unnecessary bureaucracy obscures the real issues and diverts effort from them. It can result in insufficient attention being paid to the availability of adequate resources, particularly time. Standard, generic pre-qualification questionnaires have been widely used, but are often irrelevant with little benefit to health and safety. They also tend to measure the ability to complete questionnaires, rather than to manage health and safety. There are generally more useful ways to assess competence and resources.

---

[41] HSE has commissioned research to identify ways of simplifying the assessment of competence. (See http://www.hse.gov.uk/construction/cdmguides.htm.) The outcome of this study, together with responses to these proposals will shape guidance on competence in the final draft.

232. It may be that the best individual or organisation is weak in certain areas. This can often be addressed by putting arrangements in place to cover such weak points or by employing people with particular expertise for relevant parts of the contract. What really matters is that the project team, taken as a whole, is competent and support one another.

Example 28

A client committed to securing high standards of health and safety during the construction phase of a major city centre redevelopment project set aside a sum of money to fund an occupational health professional to be present on site throughout that phase. The occupational health professional was able to carry out audiometry, checks for solvent and cement dermatitis, give training and advice on lifting and manual handling, and provide advice to contractors on reducing noise, dust and vibration hazards.

How to assess competence and resources

233. There are a number of relevant, widely recognised standards and pre-qualification schemes[42]. Where these address the above issues they are likely to be the best way of performing the initial sift. They can be supplemented, for example by site visits and one-to-one interviews to address the specific needs of projects that need particular skills.

234. Enquiries to assess competence and resources might usefully cover some or all of the following:

a) information about track record – simple evidence of health and safety performance, such as personal experience from previous projects, references from those who have engaged the dutyholder on previous projects, information from reviews following previous projects, and evidence from site visits;

b) evidence of competence of individuals[43] including managers and supervisors, their practical experience and knowledge of the work, qualifications, membership of a relevant trade or professional body, and training in health and safety;

c) the availability of sufficient, appropriate, competent people and essential equipment, facilities and management systems;

d) whether organisations and key people can devote sufficient time to the project; and

e) information about past health and safety performance, including previous enforcement action (though this may not be a reliable indicator of current standards) and the steps taken to put things right. However, an absence of enforcement action is not, on its own, a reliable indicator of competence.

235. Bids from prospective appointees can also provide a useful indication of competence in the way they set out how they propose to deal with the health and safety matters identified in the information pack.

Example 29

On the recommendation of a friend, a client appointed a contractor to demolish a four-storey building before work could start on a new-build project. The client was keen to get the work started quickly, and did not carry out the necessary checks on competence and resources prior to making the appointment. The contractor began work on the site almost immediately, but the building collapsed into the street causing damage to cars and adjacent properties, and closing off the road for several days.

The project was delayed for many months whilst insurers debated who should pay the costs incurred by the neighbours, the emergency services, the local authority and the owners of damaged vehicles. The demolition contractor's prior experience was limited to the demolition of domestic housing.

Time and resources

Regulation 7(2)(a)

236. Appointees need the necessary plant, machinery, technical facilities, trained and competent people, and time to do their jobs properly. A breakdown of funds devoted to health and safety is not required, but it may be helpful in relation to some high-risk matters specifically identified in the health and safety plan.

---

[42] Constructionline (http://www.constructionline.co.uk/) and CHAS (http://www.chas.gov.uk) are examples.
[43] See chapter 8.

237. The resources provided for a project must be sufficient to:

- carry out the design work;
- assemble the information needed;
- prepare the construction phase health and safety plan;
- mobilise the labour force and equipment;
- arrange welfare facilities;
- plan and prepare for the project; and
- carry out the construction work safely.

238. Clearly, clients, and others who plan work and make appointments, must allocate sufficient time and funds. The planned dates for key project stages should also be set out in the information pack, so that designers and contractors can plan their work and allocate resources appropriately. It is better to have a realistic completion date than an unrealistic deadline.

Example 30

A principal contractor engaged a roofing company, with whom they had worked before, to carry out refurbishment work on the roof of an existing warehouse. Competence checks were made, and these were cross-referenced with the performance of the roofing firm on the previous contracts. The contract was awarded, but the roofing firm sub-let the work to another company at a considerably reduced price. The company which carried out the work had never done such a large job before and was not competent to do the job.

A worker from this company fell to his death from the roof. The principal contractor and the roofing firm were each prosecuted for failing to adequately check the competence of the company which actually carried out the work.

Chapter 8. Information and training

239. Good information and training on health and safety are vital. People are more likely to adopt safe working practices if they understand the reasons behind them. Effective information and training contributes positively to the health and safety culture. It is needed at all levels, from the top down, and for all disciplines and is particularly important for those planning and carrying out high-risk work like demolition.

What you must do

Regulations 4, 16(2), 19(3), HSWA (S 2(2)(c)) and Management Regulations (regs. 10, 12 and 13)

240. Health and safety law requires employers to ensure the competence of their employees and to provide training and instruction as necessary. There are several additional requirements about competence, training, and information in CDM[2006]:

a) Anyone who arranges for or instructs site workers, professionals or managers, to carry out or manage design or construction work must ensure that they are competent to do their job[44], or in the case of trainees, is under the supervision of a competent person.

b) Self-employed workers have a similar duty to ensure their own competence, but their competence still needs to be confirmed by the person engaging or appointing them.

c) The principal contractor has to make sure that construction workers are provided with suitable site induction; and any further information and training needed for the particular work. They must also check that contractors provide their own employees with the extra information referred to in the following paragraph. (In practice much of this information is provided through the induction.)

d) Contractors also have to provide their workers (whether employed or self-employed) with:
   - a suitable site induction, if this is not provided by a principal contractor;
   - any necessary information, including about relevant aspects of other contractor's work, new or increased risks, such as those arising from a change of responsibilities, new technology or new systems of work[45]; and
   - the procedures to follow in an emergency and who is responsible for them.

241. When developing training schemes it is important to ensure that the content and style are appropriate. This includes providing training in a form that trainees can understand. Workforce or trade union appointed safety representatives can make a significant contribution to developing such training, and a joint approach can help ensure people adopt good practices.

242. Training is principally the responsibility of the employer or individual self-employed workers. However, principal contractors and contractors need to check that workers have basic and any additional training needed for any particular tasks. A relevant NVQ, SNVQ or CSCS card is normally enough to show basic competence, but this needs to be reviewed in the light of practical experience and higher levels of competence are inevitably needed for some work.

243. Information and training should be provided in a way that takes account of any language difficulties or disabilities[46]. It can be provided in whatever form is most suitable in the circumstances, as long as it can be understood by everyone. For employees with little or no understanding of spoken or written English, employers need to make special arrangements. These include providing translation, using interpreters, and replacing written notices with clear symbols or diagrams.

---

[44] In most cases a relevant CSCS card (http://www.cscs.uk.com/) CCNSG passport (http://www.ecitb.org.uk/learning_&_development/adult_learning/safety_passport.cfm) or similar qualification is the minimum needed to demonstrate that a worker has achieved a basic level of competence.

[45] See regulation 13(2)(b) of the Management Regulations

[46] Further advice is provided CILT, the National Centre for Languages– http://www.cilt.org.uk and the Construction Confederation – http://www.thecc.org.uk

244. The construction phase health and safety plan is a valuable source of information to contractors about risks to their employees and others under their control. It needs to be kept up to date. It should include the arrangements for providing induction information and training on site.

Induction

245. To ensure people have relevant information and training for their work, principal contractors need to ensure adequate induction for all who are new to a site; this is particularly important for young workers and those who are new to the industry. Induction is not intended to provide the general health and safety information and training that people need to do their job, but it should include explanation of the following:

a) senior management commitment to health and safety;
b) the outline of the project;
c) the individual's immediate line manager and any other key personnel;
d) any site-specific health and safety risks, for example in relation to access, transport, site contamination, hazardous substances and manual handling;
e) control measures on the site, including:
   - any site rules;
   - any permit-to-work systems;
   - traffic routes;
   - security arrangements;
   - hearing protection zones;
   - arrangements for personal protective equipment, including what is needed, where to find it and how to use it;
f) arrangements for housekeeping and materials storage;
g) facilities available, including welfare facilities;
h) emergency procedures, including fire precautions, the action to take in the event of a fire, escape routes, assembly points, responsible people and the safe use of any fire fighting equipment;
i) arrangements for first aid;
j) arrangements for reporting accidents and other incidents;
k) additional training planned, such as 'toolbox' talks;
l) arrangements for consulting and involving workers in health and safety, including the identity and role of any:
   - appointed trade union safety representatives,
   - representatives of employee safety,
   - safety committees.
m) information about the individual's responsibilities for health and safety.

Example 31

All new employees on a large transport infrastructure project attended an induction session, in works time, on their first day. Employer and trade union representatives jointly explained the key issues.

The joint approach reinforced the messages and made the induction more effective.

246. **Inductions are a way of providing workers with the specific information they need to know the particular arrangements and risks related to a specific site.** They are not an end in themselves and are **pointless if everyone switches off because they have heard it all before or they cannot understand what they are told.**

Chapter 9. Involving the workforce

247. It is essential that the workforce and their representatives are fully involved in health and safety issues at all relevant stages of a project, particularly the construction phase. This is because the workforce are most at risk of injury, and because they have a lot to contribute to improving health and safety. Their first hand involvement in the actual conditions of work means they are often the first to identify potential problems. The workforce includes anyone at work on the site, such as members of the design team.

248. Representatives of the workforce have an important part to play in explaining and selling safety measures to the workforce and in communicating their needs and views. On large sites, an active safety committee can be a highly effective way of encouraging the whole workforce to co-operate and participate in improving standards of health and safety. For example, committees can address common problems, review accidents, near misses and consider how to address risks. For any committee to be successful, it must be seen by all parties to be effective. Thought must also be given as to how to involve the workforce in urgent matters, when use of a committee is not appropriate.

249. Involving the entire workforce in identifying and controlling risks is crucial to reducing the high accident rate associated with construction. Participation will be most effective when the workforce has sufficient knowledge and confidence to provide feedback, and can identify risks and explain their importance. People have the confidence to do this when they are properly trained, know how to report their concerns, and see prompt action being taken as a result.

The Construction Industry Advisory Committee (CONIAC) has developed the following declaration. It sets out the industry's commitment to improve worker engagement as a means of reducing accidents and ill health in the construction industry.

CONIAC Declaration on Engaging the Workforce

Statement of Principle

Every construction worker has a right to work in places where risks to their health and safety are properly controlled.

Every worker should have a voice and will be given opportunities to influence health and safety in the places they work.

We commit to actively promoting positive relationships between workers and their representatives, employers, designers clients and those having control of construction work. We recognise the role that unions and safety representatives play in improving worker health and safety consultation.

We will:

- Expect **All** workers to get involved;
- Encourage clients, employers, designers, project managers and others in control of construction work to ensure workers are listened to and given real opportunities to help improve their working conditions;.
- Ensure that sufficient resources, including training, are made available *to* all sectors of the construction industry to improve worker consultation;
- Develop and share best practice in the industry.

Our aim is to achieve a long-term culture change in the construction industry, in order to improve working conditions for everyone.

What CDM2006 requires

250. Other Regulations place duties on employers to consult with worker representatives (see paragraph 251). Individual employers have the primary duty to consult their own employees, but CDM places parallel duties on the Principal Contractor regarding broader, site-wide matters. The principal contractor must ensure that:

- workers are consulted and can discuss, and offer advice on, matters connected with the particular project which affect their health or safety; and
- workers or their safety representatives can inspect and take copies of risk assessments and other information about the planning and management of the particular project which are relevant to their health or safety.

Worker representatives

251. There are two types of worker representative:

- those appointed by recognised trades unions under the Safety Representatives and Safety Committees Regulations 1977[47] (SRSCR), and,
- representatives of employee safety appointed under the Health and Safety (Consultation with Employees) Regulations 1996[48] (HSCER).

252. Where there are safety representatives, representatives of employee safety, or safety committees at a site, principal contractors should use them to ensure that they are able to benefit from the experience of the workforce

253. Both types of representative are entitled to training to enable them to play a full and active part in securing health and safety. Suitable training is available through a number of bodies, including trade unions.

254. Where representatives have not been appointed or do not provide complete coverage, the principal contractor must make other arrangements so that those not represented, including the self-employed, have similar opportunities to discuss health and safety issues. Arrangements should be tailored according to the size and nature of the project and risks involved.

Engaging the Workforce and Developing a Safety Culture

255. Good communication is central to effective consultation, engagement and the development of an effective safety culture. This will encourage workers themselves, to identify and help to ensure risks are controlled. It is not dependent on the use of representatives and safety committees alone. A combination of several approaches is likely to be most effective. For example:

- involving people actively in managing the hazards associated with their work to help identify optimum solutions and avoid expensive mistakes;
- informal discussions, invitations to attend open meetings and meetings with subcontractors;
- toolbox talks provide an opportunity for individuals to voice their concerns and become involved in health and safety issues relating to their immediate working area and tasks.

256. Highlighting the results and benefits of raising issues encourages people to become involved.

257. Once established, the arrangements for involvement and consultation should be included in the construction phase health and safety plan. The workforce and their representatives are likely to be able to contribute to the development of this plan; and, in particular, to provide insights into specialised areas of activity. (Paragraph 188 provides more details on the plan.)

---

[47] See "Safety representatives and safety committees" (L 97, ISBN 0717612201)
[48] See "A guide to the Health and Safety (Consultation with Employees) Regulations 1996." (L 95, ISBN 0717612341)

258. In order to ensure that effective consultation takes place principal contractors need to:

a) demonstrate leadership in promoting effective consultation;
b) provide encouragement, training and sufficient resources for site managers and supervisors;
c) implement an appropriate mixture of consultation methods such as:
    - using TU Safety Reps and representatives of employee safety;
    - establishing health and safety committees;
    - informal consultation during induction training, briefings, toolbox talks, site meetings;
    - suggestion schemes;
    - open door policies;
    - hazard hotlines;
    - worker awareness checklists;
d) monitor the effectiveness of the arrangements for consultation and make any required changes to improve them; and
e) celebrate the benefits of worker engagement.

What the workforce have to do

259. By actively encouraging workforce involvement, principal contractors make it easier for individual workers to participate in and discharge their own responsibilities for health and safety. Under HSWA and the Management Regulations and Regulation 5(2) workers at all levels have duties to:

a) take reasonable care for their own health and safety and that of others who may be affected by what they do at work;
b) co-operate with their employer in order to comply with any relevant health and safety law;
c) report any work situation, defects or shortcomings in health and safety arrangements which might endanger themselves or others;
d) use all work items and written systems of work provided by their employer correctly, in accordance with their training and the instructions they have received.

260. Anyone who is exposed to serious, imminent and unavoidable danger has the right, under the Management Regulations, to stop work and immediately proceed to a place of safety.

261. The duties placed on employees do not reduce the legal responsibilities of the employer. In particular, employers need to ensure that employees receive adequate instruction and training to enable them to comply with their duties.

Chapter 10. The health and safety file

(Notifiable projects only)

262. The health and safety file provides information needed during future construction work, including cleaning, maintenance, alterations, refurbishment and demolition. Information in the file is essential to those doing the work. It alerts them to risks and helps them to decide how to work safely. It can also provide information for future health and safety plans and is useful to:

- clients, who have a duty to provide information about their premises;
- designers during the development of further designs;
- co-ordinators preparing for construction work;
- principal contractors and contractors preparing to carry out or manage such work.

263. The file can provide significant benefits to the client by minimising the cost of future work, and is a key part of the information that the client, or the client's successor, is required to provide for future projects under regulation 12. It is therefore well worth the effort to ensure it is kept up to date after any relevant work or surveys, even when it is not legally required.

264. The scope, structure format and medium for the file need to be agreed between the client and co-ordinator at the start of a project. There can be a separate file for each structure, one for an entire project or site or one for a group of related structures. The file can be combined with the Building Regulations Log Book or a maintenance manual providing that this does not result in the health and safety information being lost or buried. What matters is that people can find the information they need for projects easily and any differences between similar structures are clearly shown.

265. It may be kept electronically (with suitable backup arrangements), on paper, on film, or other durable media. Whatever the format, it should be easy to find information.[49]

What you must do

266. Clients, designers, principal contractors, other contractors and co-ordinators all have legal duties in respect of the health and safety file:

- co-ordinators must prepare, review, amend or add to the file, as necessary, and give it to the client at the end of projects;
- clients, designers, principal contractors and other contractors must supply information;
- clients must keep the file for future construction work; and
- everyone providing information should make sure that it is accurate, and provided promptly.

267. A file must be produced or updated (if one already exists) as part of all notifiable projects. For some projects, for example re-decoration using non-toxic materials, and simple maintenance, there may be nothing of substance to record. Only information likely to be significant for health and safety in future work need be included. The NHBC Purchaser Manual provides suitable information for developers to give to householders.

268. The client must ensure that the co-ordinator compiles the file. In some cases, for example design and build contracts, it is more practical for the principal contractor to obtain the information needed for the file from the specialist contractors. The principal contractor can assemble the information and give it to the co-ordinator or the principal contractor can be appointed as co-ordinator for that specific purpose, and take full responsibility for preparing or updating the file.

269. The collection and compilation of the relevant data needs to be managed properly. It can be difficult to obtain information for the file after designers or contractors have completed their work. The information needs should, therefore, be clearly spelled out in advance, for example in contracts, to ensure that the information is prepared and handed over in the required form at the right time.

[49] The National Archives gives advice on electronic records – http://www.nationalarchives.gov.uk/electronicrecords/.

The contents of the health and safety file

270. The health and safety file should include information about all the following topics, where this may be relevant to the health and safety of any future construction work. The level of detail should allow the likely risks to be identified and addressed.

a) a brief description of the work carried out;
b) residual hazards and how they have been dealt with (for example surveys or other information concerning asbestos, contaminated land, water bearing strata, buried services);
c) key structural principles (eg, bracing, sources of substantial stored energy – including pre- or post-tensioned members) and safe working loads for floors and roofs, particularly where these may preclude placing scaffolding or heavy machinery there;
d) hazardous materials used (for example, lead paint, pesticides, special coatings which should not be burnt off);
e) information regarding the removal or dismantling of installed plant and equipment (for example lifting arrangements);
f) health and safety information about equipment provided for cleaning or maintaining the structure;
g) the nature, location and markings of significant services, including fire-fighting services;
h) information and as-built drawings of the structure, its plant and equipment (eg, the means of safe access to and from service voids, fire doors and compartmentation).

271. The file does not need to include things that are not likely to be needed for health and safety reasons in the future, for example:

a) the pre-tender, or construction phase health and safety plan;
b) construction phase risk assessments, written systems of work and COSHH assessments;
c) details about the normal operation of the completed structure;
d) construction phase accident statistics;
e) details of contractors and designers involved in the project;
f) contractual documents;
g) information about structures, or parts of structures, that have been demolished – unless there are any implications for remaining or future structures, eg, voids; or
h) information contained in other documents, but relevant cross-references should be included.

Example 32

A pharmaceutical company decided to commission a new process plant itself and instructed the co-ordinator to provide the health and safety file on mechanical completion.

At the commissioning stage the client then appointed itself as co-ordinator and principal contractor. The health and safety file was updated to include relevant commissioning information.

272. Some of these items may be useful to the client for later work, or may be needed for purposes apart from CDM[2006]. They may even include details that are relevant to the health and safety file, but CDM[2006] does not require them to be included in the file. Indeed including too much such material may hide crucial information about risks.

The preparation of the file

Co-ordinators

273. The co-ordinator needs to:

a) agree the structure and format with the client at the start of the project;
b) tell designers and contractors what they need to provide for the file and when;
c) gather all needed, relevant information throughout the project;
d) prepare, amend or add to the file as necessary;
e) review the file with the client to ensure they understand its purpose and value; and
f) give the file to the client at the end of the construction phase or earlier, eg when needed for another project which will begin before the end of the first project.

Designers

274. Designers need to provide the person preparing the health and safety file with relevant information. They must not wait until the end of the project. The details they provide should include information of the type described in paragraph 169 and following.

Example 33

A client included the preparation of the health and safety file in the co-ordinator's contract. The co-ordinator received information from the principal contractor and designers for inclusion within the health and safety file. The co-ordinator reviewed all the information provided and extracted what was needed for inclusion within the health and safety file. One contractor had provided his risk assessments. The co-ordinator did not include these because they were not relevant to future construction or cleaning work.

Contractors

275. Principal contractors and other contractors have to promptly provide relevant information for the file, this includes information which comes to light during work, even if it is not relevant to the work being carried out at the time. Information should be made available as early as possible to ensure the file can be:

- developed as the project progresses; and
- completed in good time and handed over when the client takes over responsibility for the structure.

Clients

276. Clients have to keep the health and safety file available for inspection by anybody who needs the information. Emergency maintenance contractors may need to see the file in advance, so that they can work safely if they are called in. **To be useful the file needs to be kept up to date, and retained for as long as it is relevant.**

277. Where clients dispose of their entire interest in a structure, they should pass the file to the new owners and ensure that they are aware of the nature and purpose of the file. Where they sell part of a structure, any relevant information in the file should be passed or copied to the new owner.

278. If the client leases out all or part of the structure, arrangements need to be made for the health and safety file to be made available to leaseholders. In some cases, the client might transfer the file to the leaseholder during the lease period. In other cases, it may be better for the client to keep the file, but tell leaseholders that it is available. If the leaseholder acts as a client for future construction projects, the leaseholder and the original client will need to make arrangements for the file to be made available to the new co-ordinator.

279. In multi-occupancy situations, for example where a housing association owns a block of flats, the owner should keep and maintain the file, but ensure that individual flat occupiers are supplied with health and safety information concerning their home.

280. A development may include roads and sewers that will be adopted by the local authority or water company. It is generally best to prepare separate files covering each client's interests.

Appendix 1 The Construction (Design and Management) Regulations

[Note: The full text of the Regulations will be provided in the final document. They are not repeated here as they can be seen in Annex A to the Consultative Document.]

Appendix 2 The information pack and health and safety plan

The information pack and health and safety plan should include or address all the following topics, where they are relevant to the work proposed. The information pack provides background information for those bidding for or planning work, and for the development of the construction phase plan, which sets out how health and safety is to be managed during the construction phase. The level of detail should be proportionate to the risks involved in the project. Paragraphs 70 and 121 provide further information about the information pack and paragraph 188, regarding the plan.

Information pack	Construction phase plan
1. Description of project a) project description and programme details including: • key dates (including planned start and finish of the construction phase); and • the minimum time to be allowed between appointment or instruction to commence work and start on site. b) details of client, designers, co-ordinator and other consultants; c) extent and location of existing records and plans.	**1. Description of project** a) project description and programme details including any key dates; b) details of client, co-ordinator, designers, principal contractor and other consultants; c) extent and location of existing records and plans.
2. Client's arrangements & requirements a) arrangements for: • timing and sequence of appointments; • review of designs and modifications; • planning for and managing of construction; • communication and liaison between parties; • security of the site; • welfare provision; b) requirements relating to the health and safety of the client's employees or customers, eg, permit-to-work systems, fire precautions, one-way systems, means of escape, 'no-go' areas, smoking and parking restrictions; c) permits and authorisation requirements; d) emergency procedures; e) site rules and other restrictions on contractors, suppliers and others eg access arrangements to those parts of the site which continue to be used by the client; f) activities on or adjacent to the site during the works – eg deliveries; g) arrangements for monitoring review	**2. Management of the work** a) management structure and responsibilities; b) health and safety goals for the project and arrangements for monitoring and review of health and safety performance; c) arrangements for: • regular liaison between parties on site; • consultation with the workforce; • the exchange of design information between the client, designers, co-ordinator and contractors on site; • handling design changes during the project; • the selection and control of contractors; • the exchange of health and safety information between contractors; • site security, • site induction and on site training; • welfare facilities and first aid; • the reporting and investigation of accidents and incidents including near misses; • the production and approval of risk assessments and written systems of

Information pack	Construction phase plan
and revision.	work; d) site rules; e) fire and emergency procedures.
3. Environmental restrictions and existing on-site risks a) safety hazards, including: • boundaries and access, including temporary access – eg narrow streets, lack of parking, turning or storage space; • adjacent land uses – eg schools, railway lines or busy roads; • existing storage of hazardous materials; • location of existing services particularly those that are concealed – water, electricity, gas, etc.; • ground conditions, underground structures or water courses where this might affect the safe use of plant, eg cranes, or the safety of groundworks; • existing structures – stability, fragile or hazardous materials, anchorage points for fall arrest systems; • previous structural modifications, including weakening or strengthening of the structure; • fire damage, ground shrinkage, movement or poor maintenance which may have adversely affected the structure; • any difficulties relating to plant and equipment in the premises, such as overhead gantries whose height restricts access; • health and safety information contained in earlier design, construction or 'as-built' drawings, such as details of pre-stressed or post-tensioned structures. b) health hazards, including: • asbestos, including results of surveys; • existing storage of hazardous materials; • contaminated land, including results of surveys; • existing structures hazardous materials; • health risks arising from client's activities.	**3. Arrangements for controlling significant site risks** a) safety risks: • delivery and removal of materials (including waste) and work equipment taking account of any risks to the public, eg during access to or egress from the site; • services, including temporary electrical installations; • preventing falls; • work with or near fragile materials; • control of lifting operations; • dealing with services — water, electricity and gas; • the maintenance of plant and equipment; • poor ground conditions; • traffic routes and segregation of vehicles and pedestrians; • storage of materials (particularly hazardous materials) and work equipment; • dealing with existing unstable structures; • accommodating adjacent land use; • other significant safety risks.

Information pack	Construction phase plan
4. Significant design and construction hazards a) significant design assumptions and suggested work methods, sequences or other control measures; b) arrangements for co-ordination of on-going design work and handling design changes; c) information on significant risks identified during design; d) materials requiring particular precautions.	b) health risks • the removal of asbestos; • dealing with contaminated land; • manual handling; • use of hazardous substances; • reducing noise and vibration; • other significant health risks.
5. The health and safety file • format and content.	**4. The health and safety file** a) layout and format; b) arrangements for the collection and gathering of information; c) storage of information.

Appendix 3 Integrated Risk Management

1. Poor pre-construction organisation, planning and co-ordination are the underlying causes of a significant proportion of construction injuries and ill health. CDM[2006] requires co-operation and co-ordination between the various parties involved in a project both during preparatory work and also its execution. But although the co-ordinator and principal contractor are appointed to address these issues it is not easy to see how they can be tackled.

2. A useful tool to improve co-operation and co-ordination is the *Risk Register* or *Risk Management Register*. It has been found to help break down the barriers between the parties that leads to each working and managing risk in isolation (the silo mentality) and also, all too often, hiding risks and buck-passing – usually to those least able to argue or manage the risks – to avoid liability should something go wrong. For the same reason it can help to avoid the production of excessive paperwork and to draw attention to key issues.

3. Risk registers formalise risk management and communicate the most important information in a structured manner. They can show links between commercial risks (eg cost and programme) and health and safety. A risk register also provides an audit trail for future reference, but if it is not kept up to date and developed it will become obsolete. To be useful, a register must be a living document, running through the whole project, maintaining continuity.

4. The aim of project risk registers is to encourage the team to use their shared knowledge and experience to ensure that risks are identified, eliminated or reduced by whoever is best able to do so. The shared risk register is a core document whose preparation draws the parties together, briefly records their findings, the risk owner, agreed control measures and "date to be done by".

5. After initial completion it becomes a control tool, which can be used to check that the planned actions are implemented. It provides a framework for design risk reduction and provides a summary of the key issues covered in the information pack. The risks remaining for the construction phase also provide a framework for the development of the construction phase plan. It will also feed into the health and safety file at the end of the project.

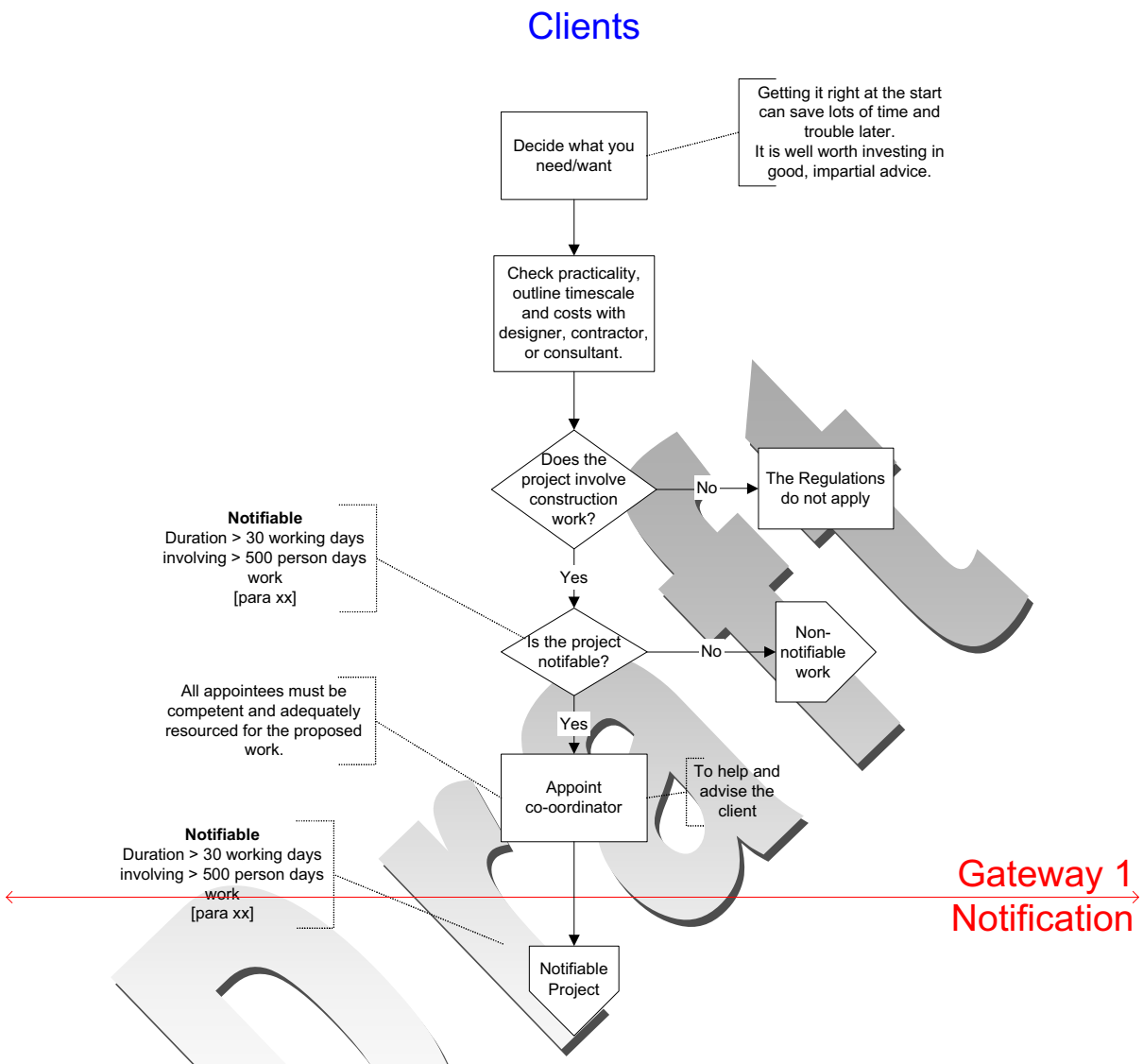
6. If generic risks are included in the risk register, rather than confining it to strategic issues, it can become bureaucratic and unhelpful. The risk register should not address construction risks that are adequately covered by normal management procedures and operative training. It is intended to draw attention to, and assist the management of, significant, project specific risks; which could impact workers lives and the commercial success of the project.

7. The following is a simple example of a risk register:

Project Risk Register				**Date:**	**Revision:**	**Author:**	
Ref. No.	**Risk description**		**Assessment**	**Action**	**Assessment**		
		Detail				**When**	**Who**

Qualitative or Quantitative

Appendix 4 Project timeline

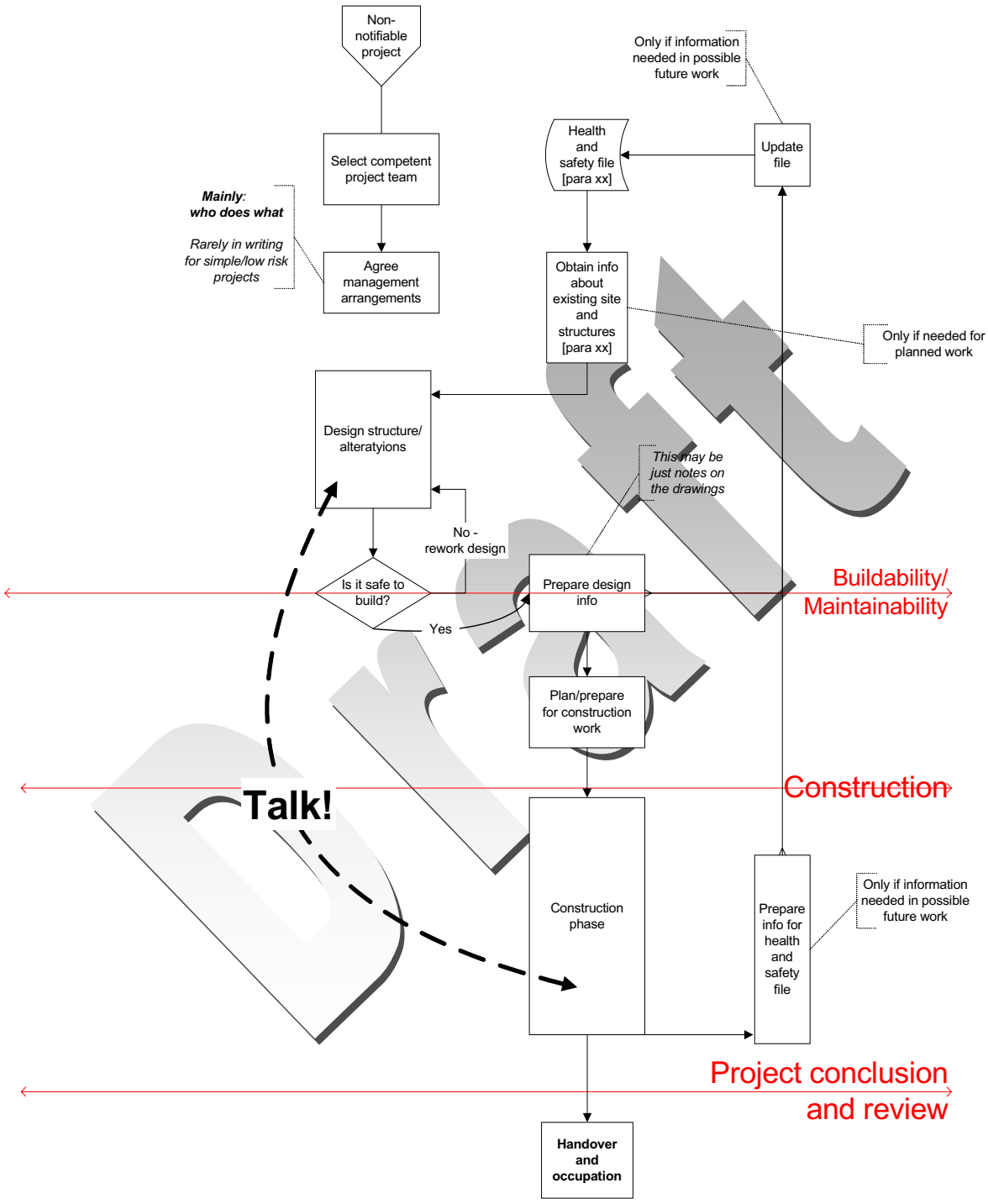


Gateways

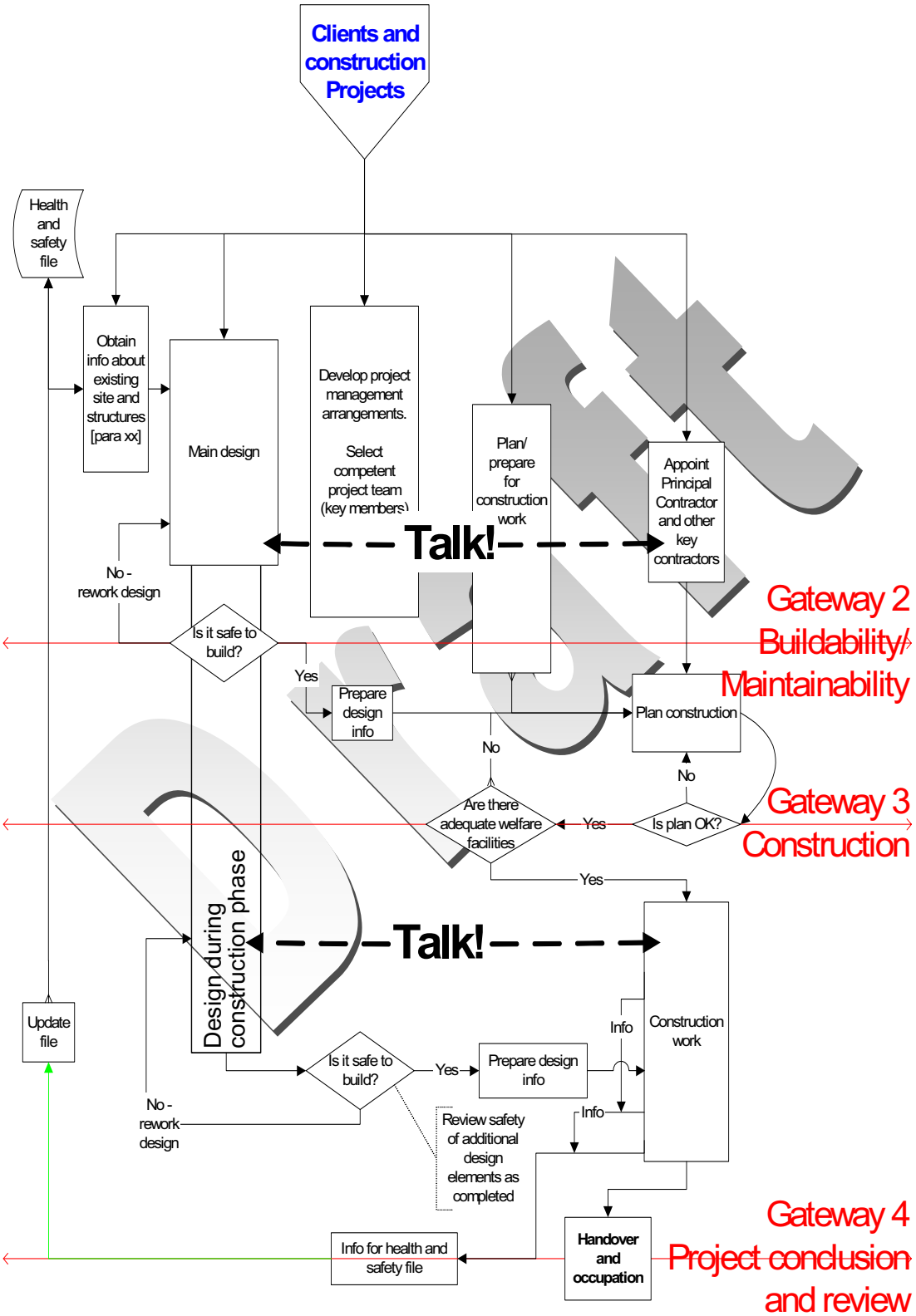
Gateways are a particular form of checkpoint — stages of a project when key decisions are made. They help to provide a structured approach to management of projects. They are used extensively in government and other large projects, but the general approach is equally relevant to small projects. Although CDM^{2006} lends itself to a gateway approach, it would be unwise to structure all other management processes around CDM. This appendix therefore illustrates how the CDM gateways can fit in with wider project gateways.

Gateways require the project team to confirm that they are satisfied that the required work has been completed to an agreed standard at each stage. In itself, this encourages more integrated team-working, which brings together all of the team's combined expertise to ensure that the client gets what they want for the best value. However, good leadership is necessary to avoid excessive bureaucracy and keep the focus on key issues.

Non-notifiable Construction Projects



Notifiable Construction Projects



Appendix 5 Summary of key health and safety legislation

NB — this list is not intended to be exhaustive.

Title	Summary	Abbreviation (if used)
Confined Spaces Regulations 1997	Safe working in confined spaces, i.e. where there is a risk of death or serious injury from hazardous substances or dangerous conditions (eg lack of oxygen)	
Construction (Head Protection) Regulations 1989	Ensuring head protection is provided and worn	
Construction (Health, Safety and Welfare) Regulations 1996	Previous regulations about practical safety requirements on site – replaced by these and the Work ar Height Regulations.	CHSW
Control of Asbestos at Work Regulations 2002	Control of exposure to asbestos	
Control of Lead at Work Regulations 2002	Control of exposure to lead	
Control of Substances Hazardous to Health Regulations 2002	Control of health risks	COSHH
Dangerous Substances and Explosives Atmospheres Regulations 2002	Controlling risks from fire and explosion due to dangerous substances.	
Electricity at Work Regulations 1989	Control of exposure to electricity	
Health and Safety (Consultation with Employees) Regulations 1996	The provision of consultation for those employees who have no safety representative	HSCER
Health and Safety (Enforcing Authority) Regulations 1998	The demarcation between HSE and Local Authorities for enforcing health and safety law	HSEAR
Health and Safety at Work etc Act 1974	General duties to ensure health and safety of employees and others so far as is reasonably practicable	HSWA
Lifting Operations and Lifting Equipment Regulations 1998	Requirements regarding the use of lifting equipment	
Management of Health and Safety at Work Regulations 1999	General management of health and safety including availability of health and safety advice and risk assessment	Management Regulations
Manual Handling Operations Regulations 1992	Control of risks from handling heavy and/or awkward loads	
Noise at Work Regulations 1989	Control of exposure to noise	
Personal Protective Equipment at Work Regulations 1992	Provision and use of personal protective equipment	
Provision and Use of Work Equipment Regulations 1998	Machinery, vehicle and other work equipment suitability and safety, including safety helmets	
Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995	Duties to report accidents, diseases and dangerous occurrences	RIDDOR
Safety Representatives and Safety Committees Regulations 1977	The right of employees to participate, be consulted and represented on health and safety issues, including the appointment of safety representatives by recognised trade unions	SRSCR
Work at Height Regulations 2005	Requirements regarding work at height and preventing falling objects – previously covered by CHSW	W@H
Workplace (Health, Safety and Welfare) Regulations 1992	General workplace issues, including some design requirements for commercial buildings	Workplace Regulations

Statutory Instruments produced since 1987 can be viewed over the internet at http://www.legislation.hmso.gov.uk/stat.htm. Statutory Instruments can be ordered at http://www.ukstate.com.

Appendix 6 References

Title **[Note: This list needs to be updated and we would like to know of guidance that you find particularly useful.]**	**Reference**	**Available from**
CDM-94 Regulations – work sector guidance for designers ISBN 0 86017 464-6	Report 166	CIRIA
CDM-94 Regulations – case study guidance for designers –an interim report. ISBN 0 86017 421 2	Report 145	CIRIA
CDM-94 Regulations – practical guidance for clients and clients' agents ISBN 0 86017 486 7	Report 172	CIRIA
CDM-94 Regulations – practical guidance for co-ordinators ISBN 0 86017 487 5	Report 173	CIRIA
Experiences of CDM-94 ISBN 0 86017 479 4	Report 171	CIRIA
CDM-94 training pack for designers ISBN 0 86017 501 4	C1	CIRIA
Designing for health and safety in construction ISBN 0 7176 0807 7		HSE Books
A guide to managing health and safety in construction ISBN 0 7176 0755 0		HSE Books
Health and Safety in Construction ISBN 0 7176 1143 4	HS(G) 150	HSE Books
CDM-94: the role of the client – construction information sheet No 39*	CIS39	HSE Books
CDM-94: the role of the co-ordinator – construction information sheet No 40*	CIS40	HSE Books
CDM-94: the role of the designer – construction information sheet No 41*	CIS41	HSE Books
CDM-94: the health and safety plan during the construction phase – construction information sheet No 43*	CIS43	HSE Books
CDM-94: the health and safety file – construction information sheet No 44*	CIS44	HSE Books
A guide to the Construction (Health, Safety and Welfare) Regulations 1996 ISBN 0 7176 1161 2	INDG220	HSE Books
Having construction work done? – Duties of clients under CDM-94	MISC193	HSE Books
Management of health and safety at work – approved code of practice and guidance ISBN 0 7176 2488 9	L21	HSE Books
Managing contractors – a guide for employers ISBN 0 7176 1196 5		HSE Books
Guidance on the Health and Safety (Consultation with Employees) Regulations 1996 ISBN 0 7176 1234 1	L95	HSE Books
Safety Representatives and Safety Committees Regulations 1977: Approved Code of Practice and Guidance (Third Edition) ISBN 0 7176 1220 1	L87	HSE Books
Successful health and safety management ISBN 07176 1276 7	HSG 65	HSE Books
Guide to the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 ISBN 0 7176 2431 5	L73	HSE Books
RIDDOR explained. The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations Free leaflet ISBN 0 7176 2441 2	HSE31 (rev1)	HSE Books
* Construction information sheets are also available on HSE's website – http://www.hse.gov.uk/		

Appendix 7 Glossary of terms

Term	Meaning
Cleaning and maintenance work	CDM[2006] applies to the cleaning of a structure using water or an abrasive at high pressure, or using corrosive or toxic substances. Designers' duties also cover routine cleaning and maintenance of structures and the permanent fixtures and fittings of structures designed as a place of work can be done safely.
Client	Anyone who procures construction work or carries it out for themselves.
CONIAC	The Construction Industry Advisory Committee represents the views of all parts of the construction industry to the Health and Safety Commission.
Construction phase	The part of the project when construction work takes place, including on-site preparations and any demolition. The construction phase ends when construction work on the project finishes. It includes fitting out or commissioning, whether carried out by a contractor or the client, is in the construction phase. Remedial work and repairs carried out after the construction phase has finished are separate projects, and may be separately notifiable.
Construction phase health and safety plan	Written details of the management arrangements for the construction work.
Contractor	An organisation or individual who carries out or manages construction work as part of a business. It includes sub-contractors and clients doing work in-house.
Demolition/ dismantling	The deliberate pulling down, destruction or taking apart of a structure, or a substantial part of a structure. It includes dismantling for re-erection or re-use. Demolition does not include operations such as making openings for doors, windows, services or removing non-structural elements such as cladding, roof tiles or scaffolding. Such operations may, however, form part of demolition or dismantling work when carried out alongside other activities.
Domestic client	A client where construction work is not related to their trade or business – usually on their own home.
Dutyholder	Someone who has duties under CDM[2006].
Enforcing authority	HSE enforces[50] CDM[2006] if: • the work is notifiable; • the whole or part of the work is to the exterior of a building or structure; • HSE normally enforces health and safety law at the site where the work is taking place or there is no other work activity there; • the work is carried out in a segregated area and normal work has stopped; or • where the local authority is the client. The local authority enforces CDM[2006] if none of the above conditions are met and where the people doing the work normally work on the premises. HSE or the local authority (usually the Environmental Health department) can provide further advice where necessary.
Fragile material	A surface or assembly liable to fail from the weight of anyone crossing, working, or falling on it (including the weight of anything that they may be carrying). Any surface or assembly may be fragile, particularly if incorrectly fixed, supported or specified. All tend to deteriorate with age, exposure to UV light and weathering. Typical fragile materials are roof lights, fibre cement sheets, corroded metal sheets, glass (including wired glass) and wood wool slabs. They present a risk to people installing the material, doing subsequent maintenance and crossing it to gain access to other parts of the structure, or plant situated on the roof. A test for fragility is set out in Advisory Committee for Roofwork Material Standards: (ACR (M)001: 2000). This can be ordered from: National Federation of Roofing Contractors, 24, Weymouth Street, London, W1N 4LX, Tel. 0207-436-0387
Great Britain's territorial sea	This normally extends 12 nautical miles from the low water mark. Special provision is made where there are estuaries and bays.
Hazard	Something with the potential to cause harm (this can include articles, substances, plant or machines, methods of work, the working environment and other aspects of work organisation). ACoP to regulation 3 of the Management Regulations provides further details.

[50] See the Health and Safety (Enforcing Authority) Regulations 1998 for further information.

Term	Meaning
Health and safety file	Information which people, including clients, designers, co-ordinators, contractors and others involved in carrying out construction or cleaning work on the structure in the future are likely to need, but could not be expected to know.
Information pack	Information obtained from the client and designers, during the design and the early planning stages for use by other designers and contractors in bidding for or planning work.
Maintenance	The repair, renovation, upkeep, redecoration and high pressure cleaning with water or abrasives, or cleaning with corrosive or toxic substances of structures. The maintenance of services that are normally fixed to or within a structure is covered by CDM-94, but the maintenance of other fixed plant is not covered. The definitions of construction work and structure in regulation 2 provide more detail.
Project	A project includes all the preparation, design, planning, construction work and the clearance or preparation of the site or structure for use or occupation at its conclusion required to achieve the end result desired by the client. Many projects involve several structures. Where there are substantial breaks between phases it may be each phase can be treated as a separate project, but projects should not be artificially split to avoid notification and the duties that follow go with it.
Residual hazards/risks	The hazards/risks that remain after the design process.
Risk	The likelihood of potential harm from a hazard being realised. The extent of the risk depends on: • (i) the likelihood of that harm occurring; • (ii) the potential severity of that harm, ie of any resultant injury or adverse health effect; and • (iii) the population which might be affected by the hazard, ie the number of people who might be exposed. (ACoP to regulation 3 of the Management Regulations provides further details).
Safely/Safety	Where these words are used on their own they should be read to include "without undue risk to health." **It is not meant to require that all risk is eliminated, but that it is reduced so far as is reasonably practicable.**
Term contracts	These can either be treated as a single project or each block of work involved can be treated as a separate project. The regulations apply to all construction work involved whichever option is taken and suitable management arrangements always need to be in place.
Utilities	Utility companies carry out a variety of roles and they may fulfil more than one role on some projects. They normally arrange for work to be done and are in the best position to ensure that designers and contractors doing the work are competent. Utilities frequently operate on sites as designers and/or contractors. When they do so, they must provide the principal contractor with relevant information about hazards arising from their designs or operations, and about how the resulting risks are to be controlled. Similarly, they must be given relevant information on the risks to their health or safety arising from the construction work. This exchange of information is straightforward in most cases. They must understand that any work they carry out on site, or which affects activities on site, is part of the project; accept the authority of the principal contractor; consult with the principal contractor before arriving on site; and comply with any relevant site rules.
Work outside Great Britain	CDM^{2006} applies to work carried out within Great Britain and certain activities in its territorial sea, for example, construction of an offshore wind farm. People working abroad have no duties under CDM^{2006}, but the law still applies to clients in Britain who choose to use designers or others working abroad. Such clients must make sure that those they engage are competent; that health and safety issues are properly considered; and that the normal information is provided. Such matters can be covered in contracts.

NB — A number of other terms are defined in regulation 2 of CDM^{2006}.