

The Construction (Design and Management) Regulations 2015



CDM2015
PRINCIPLES IN PRACTICE

Industry guidance for **Principal designers**

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(Construction Industry Advisory Committee)

CDM15/2 DRAFT

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1 Introduction

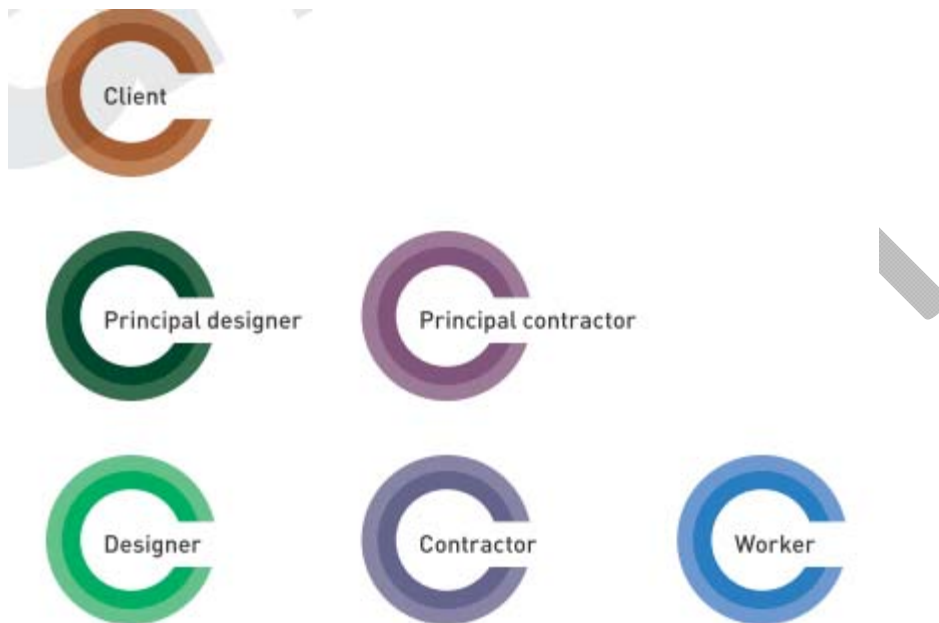
1.1 General introduction

The Construction (Design & Management) Regulations (CDM) are the main set of regulations for managing the health, safety and welfare of construction projects.

CDM applies to all building and construction work including new build, demolition, refurbishment, extensions, conversions, repair and maintenance.

This guide is based on sound industry practice and will help small businesses and organisations deliver building and construction projects in a way that prevents injury and ill-health..

There are six guides: one for each of the five duty holders under CDM and an additional one for workers. The six guides are:



These guides should help you better understand your role and that of other duty holders, especially if you have more than one role under CDM.

The Health and Safety Executive (HSE) has produced the CDM L-series to offer further guidance. It is downloadable from the HSE website: www.hse.gov.uk

1.2 Who should be the principal designer?

The principal designer must be a designer on the project and be in a position to have control over the design and planning stage.

A designer is an organisation or individual that prepares or modifies a design for a construction project, including the design of temporary works, or arranges for or instructs someone else to do so.

The principal designer will usually be an organisation or, on smaller projects, an individual with:

- a technical knowledge of the construction industry, relevant to the project
- an understanding of how health and safety is managed through the design process
- the skills to be able to oversee health and safety during the pre-construction phase of the project and the ongoing design.

The principal designer needs to have good relationships with the client and principal contractor and also essential for them to establish good relationships with other designers working on the project.

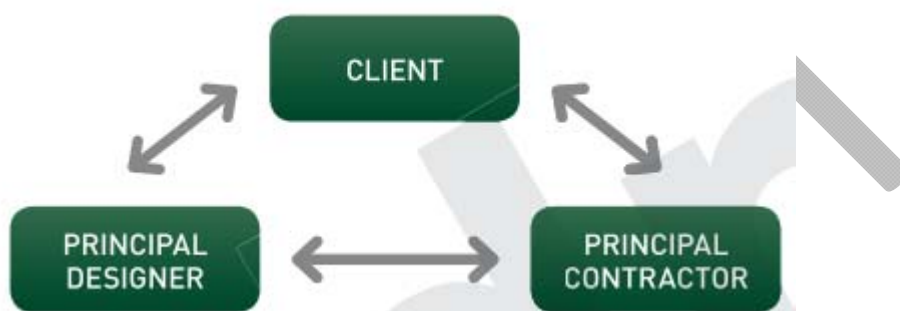
If you are also acting as a designer, refer to the *Industry guidance for designers (CDM15/3)*.

1.3 The role of a principal designer

The CDM Regulations define three main roles for managing the health and safety of a construction project.

The client has the overall responsibility for the successful execution of the project and the principal designer and principal contractor lead on different phases of the project.

The principal designer and principal contractor have an important role in co-ordinating health and safety. All three duty holders must have good working relationships from the outset if the project is to be delivered in a safe and healthy manner.



This enables the provision and flow of information to ensure that health and safety is considered when making decisions.

This is the arrangement for the majority of projects. The only exception is when the client does not need to appoint a principal designer or principal contractor because the work is to be undertaken by a single contractor.

Appointing the principal designer

You must be appointed in writing by the client. You can combine your role as principal designer with other roles such as the project manager. This will assist with the integration of health and safety in the project.

Main duties of the role

Your role as principal designer is to plan, manage and monitor the co-ordination of the pre-construction phase, including any preparatory work carried out for the project. You must:

- assist the client in identifying, obtaining and collating the pre-construction information
- provide pre-construction information to designers, principal contractor and contractors
- ensure that designers comply with their duties and co-operate with each other
- liaise with the principal contractor for the duration of your appointment
- prepare the health and safety file.

Your duties as the principal designer apply regardless of the contractual arrangements for the appointment of other designers on the project. If you appoint other designers, you are responsible for ensuring that they have the relevant skills, knowledge, training and experience to deliver their work.

2 What do you have to do?

As the principal designer, you have responsibility for managing health and safety during the pre-construction phase.

2.1 Assist with project set up

Firstly, you will want to know the client's level of knowledge and experience of this type of project. A client who is unfamiliar with construction projects will need to be made aware that the CDM Regulations apply to their project. You could refer them to the *Industry guidance for clients* (CDM15/1) for further information about what they need to do.

You may be asked to help the client to develop their initial brief. This is a good way of outlining the client's key requirements and expectations for the project, including any limitations or restrictions, such as budget, planning constraints and timescales. This brief is likely to be developed further as the project progresses and may include specifications and standards, which will in turn help to outline health and safety expectations. For example, the brief could highlight safety in design, via use of risk registers, RAG lists and raising any other specific concerns.

Refer to annex E for further information about RAG lists.

2.2 Assist with compiling the pre-construction information

The client is required to identify and obtain pre-construction information. You may need to assist the client in doing this and then collating it for passing initially to the designers and then to the principal contractor for the construction phase. For further information on the content of the pre-construction information, see Annex B.

This information should be reviewed to identify any potential impacts on health and safety. Where you identify any shortfalls in the information, you will need to advise the client on how to address them.

Review of existing pre-construction information and what to look for

The following should be considered when reviewing existing information:

- **Is the information reliable?**
- **Where has it come from?**
- **How old is it?**
- **Could it have been superseded by subsequent works?**
- **Is there any information missing (e.g. asbestos records)?**
- **Would a site visit help to confirm the accuracy of the information (e.g. location of manhole covers)?**
- **Are further surveys or investigations required?**

Remember that the information was not prepared with your work in mind.

You and the client should also agree when updates will be provided, as well as the level and type of information they would like to receive, for example whether they want to see a copy of the developing pre-construction information that will be issued to the principal contractor.

2.3 Co-ordinate the pre-construction phase

You should discuss with the client how you will manage the pre-construction phase. Meeting regularly with the client provides an opportunity to update them on the developing pre-construction information.

Co-ordinate designers

You have a responsibility to co-ordinate health and safety with all the designers, including temporary works designers. You will need to provide relevant information to designers when it becomes available.

You should tell the designers what you expect from them, including how they will work with each other. You need to be sure that designs are co-ordinated between the different designers to identify any potential impacts on health and safety during the full project lifecycle, from construction to maintenance, cleaning and, where relevant, during its use as a workplace.

You must ensure that the designers comply with their duties during the design stage. You should talk to them early on to find out how they will consider health and safety and how they will review its effectiveness. This will help you to decide which elements of the design you wish to review in detail as the design develops.

Oversee design decisions

You are **not** expected to review everything during design development. You should focus your attention on areas where there is a high risk to health and safety, including changes made to the original design. You can do this by leading design review meetings.

Even if you do not have technical knowledge of all aspects of the design, you should be prepared to challenge the designers on their decisions and the process they followed, including any assumption they have made.

Once the designs are ready for inclusion in the pre-construction information, you will want to undertake a review of the health and safety information provided, such as any remaining risks, sequencing of the construction process, the details of a phased handover and statements about any assumptions and key decisions. Many risks may remain; if they are well known or expected by a contractor they do not need to be included in the pre-construction information but it is important that any unusual risks are clearly identified and communicated, for example on drawings.

This not only helps you to confirm that designers have considered health and safety in their designs, but it also helps to demonstrate to the client that you are fulfilling your duties.

Communicate with the client

You should communicate with the client regularly, to provide them with updates on progress and to raise any potential issues, such as concerns that designers are not co-operating. However, you are expected to resolve such problems directly with the designers first, before involving the client.

2.4 Liaise during the construction phase

You must provide the pre-construction information to the principal contractor. This is required so that they can develop the construction phase plan to help them plan and manage the construction work.

Prepare the pre-construction information

To do this, you need to compile and review the pre-construction information to check that the information provided is appropriate for supporting the construction phase. It should be specific to the project and should **not** include information that a principal contractor familiar with this type of work would be expected to know. Examples of things to include could be particular risks identified on drawings, specific erection sequencing and any temporary support that is required.

Communicate with the principal contractor

You must ensure that the principal contractor receives the pre-construction information, including any significant health and safety issues arising from the original client brief, and any subsequent changes to the brief or issues identified by the designers.

You must liaise with the principal contractor throughout your appointment, communicating with them regularly to ensure that the design, including temporary works design, is co-ordinated. This provides you with the opportunity to raise any potential issues.

You should also support the principal contractor in obtaining responses from designers to any questions relating to health and safety.

You and the principal contractor should agree methods of communication with other contractors, as the principal contractor has a co-ordination role and may wish to be involved in the discussions.

2.5 Prepare the health and safety file

It is your responsibility to prepare and develop the health and safety file and ensure it is handed over to the client.

However, if your appointment ends before the project is completed, you must hand over the file to the principal contractor. They will then continue to develop it and hand over the completed file to the client.

For further information on the health and safety file, see Annex C.

3 Information required by the principal designer

As the principal designer, you should receive certain information during the different phases of the project.

3.1 Information at project set up

Before you start work as the principal designer, it is important to obtain details of your appointment in writing, which should outline the scope of services you will provide, including timescales and resources required.

The client brief

Whilst the initial client brief sets out their requirements and expectations for the project, it is also important that it details their health and safety expectations.

You should ask for existing information from the client, which could include any previous health and safety file, site services, drawings, asbestos information, ground conditions and other relevant surveys. Further useful information could be obtained from the client's maintenance and operational staff.

You may also need information about site arrangements and restrictions, for example security, existing occupants and access.

At this stage of the project, it is useful to obtain details of the client's main contacts, as well as any designers and contractors involved in the project.

3.2 Information during the pre-construction phase

The designers should tell you if there are any issues with the health and safety content of the client brief or any other existing information. The designers may have questions or queries and identify any ambiguous or missing information. As the principal designer you will need to respond, either directly or by obtaining further information from the client.

The designers should give you regular updates, including information about issues or design changes that could potentially impact on health and safety. You may need to inform the client about these, especially where changes have been made to their original brief.

The designers must provide health and safety information relating to their design, including any unusual remaining risks and details of the key assumptions and decisions they have made. This information is an important part of the pre-construction information that will be provided to the principal contractor. Examples could include risks identified on drawings, specific sequencing of erection, any phased handovers and any temporary support that is required.

You will also need design information for the health and safety file. This should include information that would be required for the post-construction life of the building, such as during cleaning, maintenance, alteration or demolition.

3.3 Information during the construction phase

The principal contractor could provide feedback on the adequacy of the pre-construction information and/or design information provided. They may have questions or queries and may identify ambiguous or missing information. As the principal designer you will need to respond, either directly or by obtaining further information from the client or the designers.

The principal contractor should provide information about any issue or change that could potentially impact on health and safety during maintenance, operation and demolition. As the principal designer, you need to understand this impact and, where necessary, discuss this with the designers and client. An example would be installing cladding in such a way that it will be harder to replace, maintain or clean.

3.4 Information for completion and handover

For the health and safety file, the principal contractor will need to provide construction information, including any changes to the original design and as-built drawings. This should include information that is required for cleaning, maintenance, alteration or demolition.

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4 Information provided by the principal designer

As the principal designer, you should provide certain information during the different phases of the project.

4.1 Information at project set up

Your proposal

You should produce a proposal for the client outlining the scope of the principal designer role and explaining how you intend to fulfil it. The proposal may include an overview of your resources, as well as your skills, knowledge, training and experience.

Requirements for the pre-construction information

Part of your role is to provide advice to the client about the information required for the pre-construction information (see Annex B), in particular any gaps in the available information and how they could be addressed. A review of this information is particularly important in order to identify potential issues early in the project.

4.2 Information during the pre-construction phase

Information for the designers

You need to provide relevant pre-construction information to all the designers, which may include the client brief for the project and any specifications or minimum standards. Existing information also needs to be provided, which could include a previous health and safety file, services, drawings, asbestos information, ground conditions and any other relevant surveys. This information could also include health and safety expectations for the project, as well as information obtained from the client's maintenance and operational staff.

As part of your co-ordination role, it is useful to share details of the client or their representative(s), as well as any other designers and contractors involved in the project, with the designers.

You should inform the designers of your expectations for how the pre-construction phase will be managed, including methods of communication, circulation of information and attendance at meetings.

Information for the client

You should update the client on the progress of the pre-construction phase, such as the status of information gathering and development of the design. Your updates should also include feedback on any significant health and safety issues arising from their original brief, and any subsequent changes to the brief or the design.

4.3 Information during the construction phase

The pre-construction information

You must provide the pre-construction information to the principal contractor. This information will be used to prepare the construction phase plan, as well as developing the health and safety file. Annex B outlines the content required for the pre-construction information, which will include existing information as well as design information for construction, identify unusual remaining risks, list key assumptions and decisions made and clarify sequencing requirements.

Information about the health and safety file

In addition, you will need to provide the principal contractor with details of any agreed format, structure and required content for the health and safety file. See Annex C for more information.

Passing on queries

Even though you may have provided the principal contractor with details of the main contacts for the project, you are responsible for ensuring that all designers receive any health and safety-related questions or queries from the principal contractor regarding the design.

4.4 Information for completion and handover

Ensure that the health and safety file is handed over to the client. However, if your appointment ends before the project is completed, you must hand over the file to the principal contractor.

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5 What does good look like?

This section identifies good practice. While the examples provided are not a requirement of the CDM regulations, they may help you be more effective as the principal designer. The examples are not exhaustive but illustrate how the principal designer can contribute to the success of the project.

5.1 Good examples when assisting with project set up

Provide a schedule on appointment

As soon as you have been appointed, you should provide the client with a detailed schedule of services and resources to help plan what you need to do to ensure the client is clear about what to expect and to reassure them that you are fulfilling your role.

Develop a good relationship with the client

This will assist you in managing health and safety on the project and resolving any issues. It will take time but should be worthwhile. Talk to the client so that you understand their needs; this is easier at face-to-face meetings than by phone or email.

Ensure you understand the brief

Talk to the client about their brief, to receive a further insight into their requirements. This will also give you an opportunity to ask questions and offer suggestions.

Clarify roles

To avoid confusion, you should distinguish between the purpose of the principal designer and the designer roles by separating the scope of service and resources required for each.

Encourage project team meetings

Leadership from the client is important and they should be encouraged to hold project team meetings to bring all parties together. Involving the client and principal contractor in meetings should improve co-ordination and understanding, particularly when making decisions.

Undertake an early site visit

This should assist you with the review of the existing information, as well as helping you to understand the site arrangements and conditions. The context provided by a site visit should also aid you with the design co-ordination. Where possible, involve the client in your site visit to identify and understand any potential issues.

Use BIM

If the project is using building information modelling (BIM), consider how you could utilise this in your role as principal designer. It could help you to:

- consider the co-ordination of health and safety information when developing the BIM execution plan
- obtain existing information in order to review it and pass it to all designers
- obtain design information to review health and safety risks
- provide pre-construction information to the principal contractor
- monitor and gather information for the health and safety file
- develop a database of good practice guides and prompt lists.

Be proactive

For example:

- where the client does not produce an adequate brief, you should spend time with them to help develop it
- you need to raise any significant health and safety concerns with the client as soon as possible – do not wait for the next meeting

- consider how elements of the final structure can be utilised during the construction, for example by installing stairs early in the build to reduce the need for scaffolding. This will not only have a health and safety benefit but could also reduce time and costs
- ensure that any significant health and safety risks identified are added to the project risk register
- encourage safer designs through the use of RAG lists.

5.2 Good examples when co-ordinating the pre-construction phase

Arrange a pre-design meeting with the client and the designers

This is an opportunity to discuss the brief and the approach to health and safety on the project. This will ensure that everyone fully understands what is required and provides an opportunity to ask questions and make suggestions. It will also start to build relationships.

Where possible, seek contractor input during the design phase

This helps to anticipate potential construction issues, and to identify opportunities for improving the design. Where a contractor has not yet been appointed you could consult a contractor with relevant knowledge.

Participate in design co-ordination meetings across all disciplines

This helps to better understand how the design is being developed, allows you to ensure that health and safety is integrated into design meetings and provides an opportunity to challenge the design by asking: 'Can this be done more safely and can we reduce harm to health?'

Actively encourage designers to work together as a team

Encourage designers to regularly talk and listen to each other throughout the design period. You can support their communication by providing breakfast for an early meeting or by celebrating project milestones.

Encourage the designers to involve end users from the early stages of the design

This helps them to further understand the proposed use and maintenance requirements. This could also provide an opportunity to test the original client brief and ensure all aspects have been considered.

Embed health and safety into everything

To ensure that health and safety is actively managed as part of the project and is not seen as a 'bolt-on', you should suggest that it is integrated within project reporting and in meetings as a standard agenda item. By avoiding additional reporting and more meetings this also creates efficiencies.

Encourage a consistent approach to how information is provided by the designers

This will assist in producing the pre-construction information and the health and safety file. Using a consistent format, including the same software, is a more efficient way for you to review and collate the information. This should also benefit those who receive the information. Where practical, consider asking the principal contractor for their preferred format for the pre-construction information, as this may help them to understand the content more quickly and reduce their queries.

Evaluate the process

Undertake a review towards the end of the design stage to determine any design-related lessons learnt that may benefit the client, designers and you on future projects. You could also take this opportunity to review the way in which you have undertaken the principal designer role and identify areas for improvement. This could include obtaining feedback from the client and other designers.

5.3 Good examples when liaising during the construction phase

Attend site or progress meetings

This will help you to maintain a good working relationship with the principal contractor. This should also allow you to actively discuss queries and issues.

5.4 Good examples for completion and handover of health and safety file

Prepare content for the health and safety file early

Gather information for the health and safety file as soon construction progresses rather than leaving it until the end of the project. This is more efficient and recognises that it may be difficult to obtain certain information once the project has been completed.

Evaluate the process

Undertake a review towards the end of your involvement in the project to determine any lessons learnt. This should include whether the risks identified during the design stage were relevant and whether any other unusual risks arose that were not identified. You could also undertake a specific review with the principal contractor to find out whether the pre-construction information assisted them during the construction phase.

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6 Advice for principal designers working for domestic clients

Domestic clients are people who have construction work carried out on their own home, or the home of a family member.

When working on a project for a domestic client your role is very similar to that undertaken for other clients. However, this is the only circumstance where you may become a principal designer without a written appointment. Where there is more than one contractor, the first designer involved becomes the principal designer, unless the client appoints another designer to the role.

The domestic client duties usually default to the contractor or the principal contractor, although you could be asked to undertake these duties. If this is the case, there must be a written agreement in place. Refer to the *Industry guidance for clients* (CDM15/1) for further information on the client's duties.

For a typical domestic project, a builder is likely to produce a quotation, a schedule of works or list of items which will be classed as design. If you are the first appointment and there is more than one contractor, you will become the principal designer. However, the co-ordination and effort required should be proportionate to the scale of the project. The health and safety file could include information on any equipment installed such as manufacturer instructions. Where drawings or sketches exist, these should also be included.

For example, for a bathroom refurbishment the builder has appointed a plumber and an electrician. As the builder was appointed first, they are the principal designer as well as the principal contractor. In this case, planning and co-ordination for the design could happen through conversations to understand the work required, including the potential for using existing electrical and water supplies.

The health and safety file for this work may include the manufacturer's instructions for a new shower and a sketch of the new bathroom layout.

Annex A

CDM duty holders and their roles summarised

CDM duty holders* – who are they?	Summary of role/main duties
Clients	
Organisations or individuals for whom a construction project is carried out.	<p>Make suitable arrangements for managing a project. This includes making sure that:</p> <ul style="list-style-type: none"> • other duty holders are appointed • sufficient time and resources are allocated. <p>Clients must also make sure that:</p> <ul style="list-style-type: none"> • relevant information is prepared and provided to other duty holders • the principal designer and principal contractor carry out their duties • welfare facilities are provided.
Domestic clients	
People who have construction work carried out on their own home, or the home of a family member, that is not done in furtherance of a business, whether for profit or not.	<p>Domestic clients are in scope of CDM 2015, but their duties as a client are normally transferred to:</p> <ul style="list-style-type: none"> • the contractor, on a single contractor project, or • the principal contractor, on a project involving more than one contractor. <p>However, the domestic client can choose to have a written agreement the principal designer to carry out the client duties.</p>
Principal designers**	
Designers appointed by the client in projects involving more than one contractor. They can be an organisation or an individual with sufficient knowledge, experience and ability to carry out the role.	<p>Plan, manage, monitor and co-ordinate health and safety in the pre-construction phase of a project. This includes:</p> <ul style="list-style-type: none"> • identifying, eliminating or controlling foreseeable risks • ensuring designers carry out their duties. <p>Prepare and provide relevant information to other duty holders.</p> <p>Liaise with the principal contractor to help in the planning, management, monitoring and co-ordination of the construction phase.</p>
Designers	
Those who, as part of a business, prepare or modify designs for a building, product or prepare or modify designs to system relating to construction work.	<p>When preparing or modifying designs, eliminate, reduce or control foreseeable risks that may arise during:</p> <ul style="list-style-type: none"> • construction • the maintenance and use of a building once it is built. <p>Provide information to other members of the project team to help them fulfil their duties.</p>
Principal contractors	
Contractors appointed by the client to co-ordinate the construction phase of a project where it involves more than one contractor.	<p>Plan, manage, monitor and co-ordinate the construction phase of a project. This includes:</p> <ul style="list-style-type: none"> • liaising with the client and principal designer • preparing the construction phase plan • organising co-operation between contractors and co-ordinating their work. <p>Ensure that:</p> <ul style="list-style-type: none"> • suitable site inductions are provided • reasonable steps are taken to prevent unauthorised access • workers are consulted and engaged in securing their health and safety • welfare facilities are provided.

Contractors	
Those who do the actual construction work. They can be either an individual or a company.	<p>Plan, manage and monitor construction work under their control so that it is carried out without risks to health and safety.</p> <p>For projects involving more than one contractor, co-ordinate their activities with others in the project team – in particular, comply with directions given to them by the principal designer or principal contractor.</p> <p>For single-contractor projects, prepare a construction phase plan.</p>
Workers	
The people who work for or under the control of contractors on a construction site	<p>They must:</p> <ul style="list-style-type: none"> • be consulted about matters which affect their health, safety and welfare • take care of their own health and safety and that of others who may be affected by their actions • report anything they see which is likely to endanger either their own or others' health and safety • co-operate with their employer, fellow workers, contractors and other duty holders.

* Organisations or individuals can carry out the role of more than one duty holder, provided they have the skills, knowledge, experience and (if an organisation) the organisational capability necessary to carry out those roles in a way that secures health and safety.

** Principal designers replace the role undertaken by CDM co-ordinators under CDM 2007.

Annex B

Pre-construction information

What is pre-construction information?

1. Pre-construction information provides the health and safety information needed by:

- a. designers and contractors who are bidding for work on the project, or who have already been appointed, to enable them to carry out their duties
- b. principal designers and principal contractors in planning, managing, monitoring and co-ordinating the work of the project.

It also provides a basis for the preparation of the construction phase plan. Some material may also be relevant to the preparation of the health and safety file (see Annex C).

2. Pre-construction information is defined as information about the project that is already in the **client's possession or which is reasonably obtainable by or on behalf of the client**. The information must:

- a. be relevant to the particular project
- b. have an appropriate level of detail
- c. be proportionate, given the nature of the health and safety risks involved.

3. Pre-construction information should be gathered and added to as the design process progresses to reflect new information about the risks to health or safety and how they should be managed. Preliminary information gathered at the start of the project is unlikely to be sufficient.

4. When pre-construction information is complete it must include proportionate information about:

- a. the project, such as the client brief and key dates of the construction phase
- b. the planning and management of the project, such as the resources and time being allocated to each stage of the project and the arrangements to ensure there is co-operation between duty holders and that the work is co-ordinated
- c. the health or safety hazards of the site, including design and construction hazards and how they will be addressed
- d. any relevant information in an existing health and safety file.

5. The information should be in a convenient form and be clear, concise and easily understandable to allow other duty holders involved in the project to carry out their duties.

Annex C

The health and safety file

The health and safety file is defined as a file appropriate to the characteristics of the project, containing relevant health and safety information to be taken into account during any subsequent project. **The file is only required for projects involving more than one contractor.**

The file must contain information about the current project that is likely to be needed to ensure health and safety during any subsequent work such as maintenance, cleaning, refurbishment or demolition. When preparing the health and safety file, information on the following should be considered for inclusion:

- a. A brief description of the work carried out.
- b. Any hazards that have not been eliminated through the design and construction processes, and how they have been addressed (for example, surveys or other information concerning asbestos, contaminated land, water-bearing strata, buried services and so on).
- c. Key structural principles (for example, bracing or sources of substantial stored energy including pre- or post-tensioned members) and safe working loads for floors and roofs
- d. Hazardous materials used (for example, lead paints and special coatings).
- e. Information regarding the removal or dismantling of installed plant and equipment (for example, any special arrangements for lifting such equipment).
- f. Health and safety information about equipment provided for cleaning or maintaining the structure.
- g. The nature, location and markings of significant services, including underground cables, gas supply equipment and fire-fighting services.
- h. Information and as-built drawings of the building, its plant and equipment (for example, the means of safe access to and from service voids, and the position of fire doors).

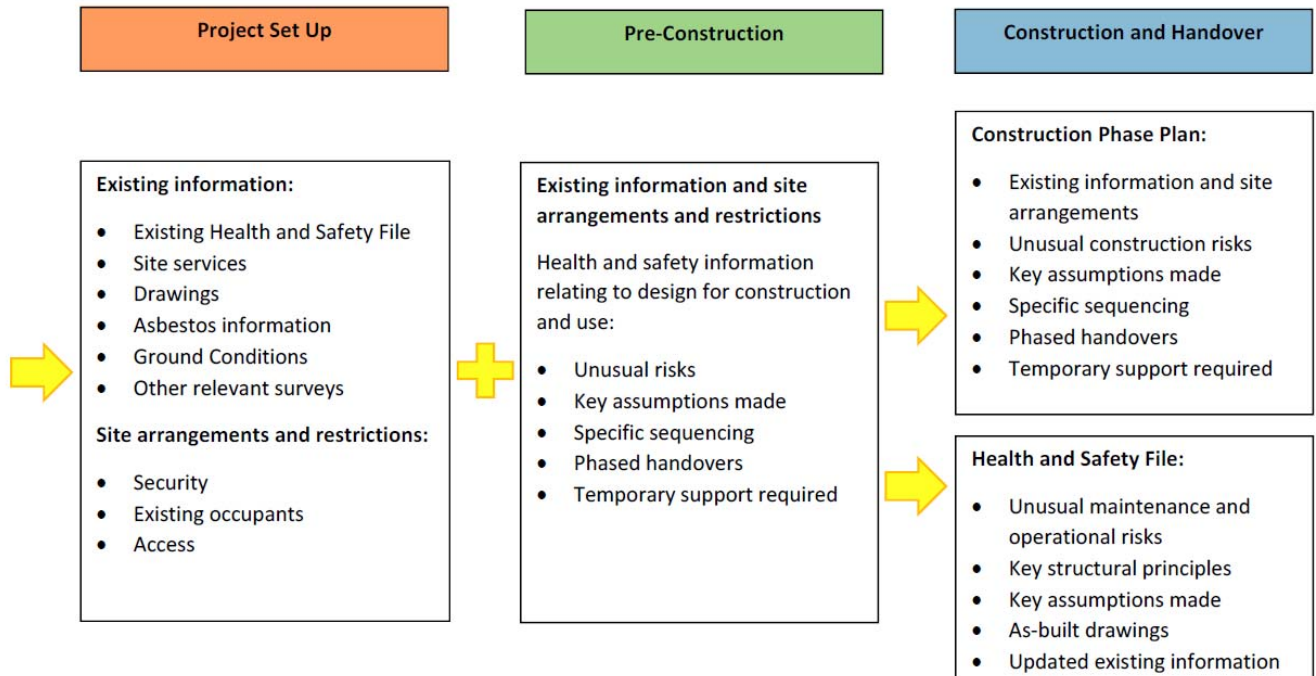
There should be enough detail to allow the likely risks to be identified and addressed by those carrying out the work and be proportionate to those risks.

The file **should not** include things that will **not** help when planning future construction work, such as pre-construction information, the construction phase plan, construction phase risk assessments or contractual documents.

Annex D

Information flow

This chart illustrates the information flow during the key stages of a project, including information received from set up to completion and handover.



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Annex E

CDM Red, amber, green (RAG) lists

RAG lists are practical aids to designers on what to eliminate, avoid and encourage.

Red lists

Hazardous procedures, products and processes that should be eliminated from the project where possible.

- Lack of adequate pre-construction information (e.g. asbestos surveys, details of geology, obstructions, services, ground contamination and so on).
- Hand-scabbling of concrete (e.g. 'stop ends').
- Demolition by hand-held breakers of the top sections of concrete piles (pile cropping techniques are available).
- Specification of fragile roof lights and roofing assemblies.
- Processes giving rise to large quantities of dust (e.g. dry cutting, blasting and so on).
- On-site spraying of harmful substances.
- Specification of structural steelwork which is not purposely designed to accommodate safety nets.
- Designing roof mounted services that require access (for maintenance and so on), without provision for safe access (e.g. barriers).
- Glazing that cannot be accessed safely. All glazing should be anticipated as requiring cleaning replacement, so a safe system of access is essential.
- Entrances, floors, ramps, stairs and escalators not specifically designed to avoid slips and trips during use and maintenance, including taking into account the effect of rain water and spillages.
- Design of environments involving adverse lighting, noise, vibration, temperature, wetness, humidity and draughts or chemical and/or biological conditions during use and maintenance operations.
- Designs of structures that do not allow for fire containment during construction.

Amber lists

Products, processes and procedures to be eliminated or reduced as far as possible and only specified or allowed if unavoidable. Including amber items would always lead to the provision of information to the principal contractor.

- Internal manholes and inspection chambers in circulation areas.
- External manholes in heavily used vehicle access zones.
- Specification of 'lip' details (i.e. trip hazards) at the tops of pre-cast concrete staircases.
- Specification of small steps (e.g. risers) in external paved areas.
- Specification of heavy building blocks (e.g. those weighing more than 20kgs).
- Large and heavy glass panels.
- Chasing out concrete, brick or blockwork walls or floors for the installation of services.
- Specification of heavy lintels (slim metal or hollow concrete lintels are better alternatives).
- Specification of solvent-based paints and thinners, or isocyanates, particularly for use in confined areas.
- Specification of curtain wall or panel system without provision for the tying or raking of scaffolds.
- Specification of blockwork wall more than 3.5 metres high using retarded mortar mixes.
- Site traffic routes that do not allow for one-way systems and/or vehicular traffic segregated from site personnel
- Site layout that does not allow adequate room for delivery and/or storage of materials, including site specific components.
- Heavy construction components which cannot be handled using mechanical lifting devices (because of access restrictions/floor loading and so on).
- On-site welding, in particular for new structures.
- Use of large piling rigs and cranes near live railways and overhead electric power lines or where proximity to obstructions prevents guarding of rigs.

Green lists

Products, processes and procedures to be positively encouraged.

- Adequate access for construction vehicles to minimise reversing requirements (one-way systems and turning radii).
- Provision of adequate access and headroom for maintenance in plant room, and adequate provision for replacing heavy components.
- Thoughtful location of mechanical and electrical equipment, light fittings, security devices and so on to facilitate access, and placed away from crowded areas.
- Specification of concrete products with pre-cast fixings to avoid drilling.
- Specification of half board sizes for plasterboard sheets to make handling easier.
- Early installation of permanent means of access, and prefabricated staircases with hand rails.
- Provision of edge protection at permanent works where there is a foreseeable risk of falls after handover.
- Practical and safe methods of window cleaning (e.g. from the inside).
- Appointment of a temporary works co-ordinator (BS 5975)
- Off-site timber treatment if PPA- and CCA-based preservatives are used (boron or copper salts can be used for cut ends on site).
- Off-site fabrication and prefabricated elements to minimise on site hazards.
- Encourage the use of engineering controls to minimise the use of personal protective equipment.