

# Safety in Design

An introduction to the importance of health and safety in design under the Health and Safety at Work Act 2015

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The new Health and Safety at Work Act 2015 ("the Act"), which came into force on 4 April 2016, places significant personal duties on those in positions of responsibility to ensure that their employees and workplaces are given the "highest level of protection".

## Why is Safety in Design important?

On top of the many broad general duties imposed by the Act, the Act also imposes additional responsibilities on designers who design or supply structures that are used, or could be reasonably expected to be used, at a workplace – think spatial designers, art installation designers, building designers, architects, engineers, or any designer erecting structures or creating spaces and experiences.

The new health and safety laws require designers to ensure, so far as is reasonably practicable, that any structure they design is without risks to the health and safety of persons who:

- Use the structure at a workplace (end users / customers);
- Construct the structure at a workplace;
- Carry out the manufacture, assembly, use, maintenance, proper demolition and disposal of the structure at a workplace; or
- Are in the vicinity of a workplace and are exposed to the structure, or whose health and safety may be affected by an activity related to the structure.

To fulfil these responsibilities, designers must give up-to-date information to each person who is provided with their design, including:

- The purpose for which the structure was designed;
- Any risks or hazards identified in the structure, including the results of any calculations or testing; and
- The necessary steps, training, instruction or supervision needed to ensure that the structure is used without risks to health and safety.

These responsibilities are in line with the principles of the Act, which provide that the person who creates the risk must be the one responsible for removing or mitigating that risk.

As a failure to heed these responsibilities could have significant consequences, including punishment by hefty fines and imprisonment, designers should consider adopting or re-evaluating health and safety protocols within their practice to ensure safety in design and compliance with laws. Having written safe-design practices in place also serves as a record of the designer's proactive efforts to discharge their obligations under the new health and safety laws.

## Recommended steps to be taken

The best time to eliminate any potential hazards in a structure is at the design stage.

Designers should consider how their design will affect the health and safety of those who will interact with the structure throughout its life cycle – from construction, use and maintenance to demolition. Recommended safe

design practices include the integration of control measures early in the design process to eliminate or, if this is not reasonably practicable, minimise risks to health and safety throughout the life of the structure being designed.

While designers may not have management or control over the actual use of their design, they can discharge their duties by:

- (a) Adopting a pro-active approach in identifying, eliminating and managing risks relating to the structure;
- (b) Systematically assessing how their design can be constructed, used, cleaned, maintained and demolished safely;
- (c) Identifying foreseeable hazards associated with the design of their structure (for example mechanical hazards, electrical and heat hazards, ergonomic hazards, maintenance hazards) and eliminating any hazards in the design or structure as far as is reasonably practicable;
- (d) Providing the information, training, instruction and supervision necessary to protect all persons from risks to their health and safety arising from work carried out relating to the structure; and
- (e) Considering innovative approaches to design that will eliminate or minimise risk and result in an intrinsically safer design or structure.

Whilst the design process and safety aspects will vary depending upon each specific project, a typical design project could include the following steps:

- (1) Planning the design process (including stakeholder input): How will the design process be carried out, and who will be involved at each stage?

Making sure that the key stakeholders (including the client) are involved and collaborating together is essential for an effective risk management process. The client and other stakeholders will each have their own responsibilities, including the transfer of information and making safety decisions at the initial planning phase.

- (2) Identify and assess the foreseeable uses for the design.

This too involves the client – it is important for the designer to gauge the client's objectives and intended outcomes for the design, to enable the design to establish the intended and foreseeable uses of the design.

- (3) Undertake a safety-in-design risk assessment: This is often done in a workshop environment and involves, where possible, the client, designers, builders, project managers, product suppliers and the intended operators of the completed works.

This step should enable the designer to develop a safety-in-design risk assessment and plan, which can be reviewed and updated regularly during the project. The risk assessment should include:

- (a) Identification of all hazards associated with the project taking into account the full range of intended uses, as well as foreseeable misuse of the works;
- (b) Assessing the risk of harm arising, and existing controls;
- (c) Eliminating hazards, and controlling risks (If identified risks cannot be eliminated by amending the design in a practicable manner, then the designer's focus shifts to reducing the risk so far as reasonably practicable. The designer must consider what they know, or ought reasonably to know, about the risk and any ways of reducing the risk);

- (d) Dealing with residual risks and hazards; and
  - (e) Monitoring and reviewing the risk assessment throughout the project, including at key design phases. These items should be documented, and all safety related decisions also recorded.
- (4) Regularly communicate and consult with the client and other key stakeholders, and provide them with adequate information so as to prevent accidents from happening.

The client or owner should be consulted at all design stages on risk management, safety in design decisions, and implementation of control measures.

- (5) Residual risks must be notified as part of a project handover/completion.

By creating and updating the formal risk assessment throughout the project, that document can form the basis of notifying/informing all parties at the end of the project about residual risks, and the steps that have been proposed/taken to manage those risks.

## **Conclusion**

The responsibilities imposed by the Act on designers are intended to ensure that health and safety issues are properly considered when structures are designed. Of course, the safe design of a structure will always be part of a wider set of design objectives, including the design's practicability, aesthetics, cost and functionality. Nevertheless, these sometimes competing objectives need to be balanced in a manner that does not compromise the health and safety of those who work on or use the structure over its life.

Eliminating hazards at the design or planning stage is often easier and cheaper to achieve than making changes later when the hazards become a real concern in the workplace. Being cognisant of safety upfront during the design process will invariably have a positive impact down the line.

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For a more general overview of the Health and Safety at Work Act 2015, please see our background paper [here](#).



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