

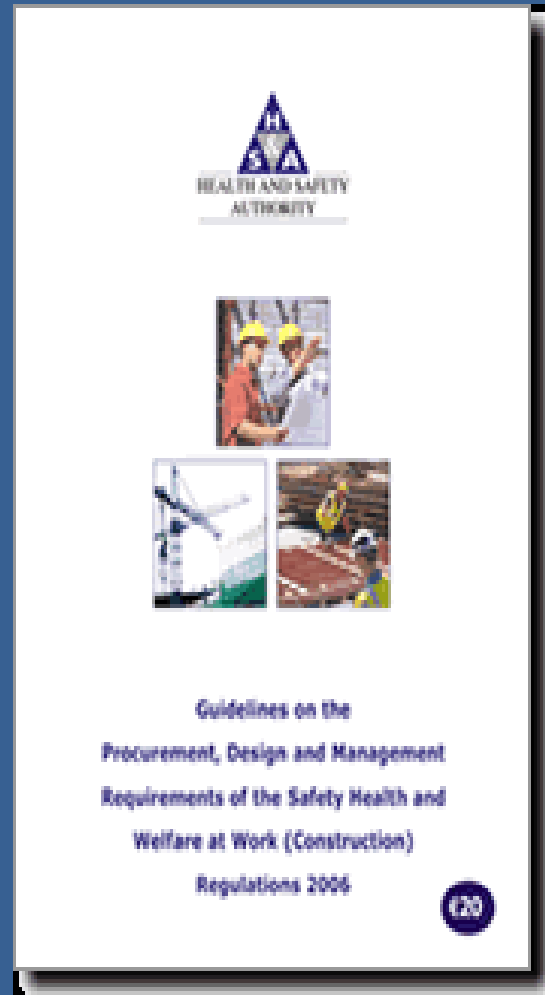
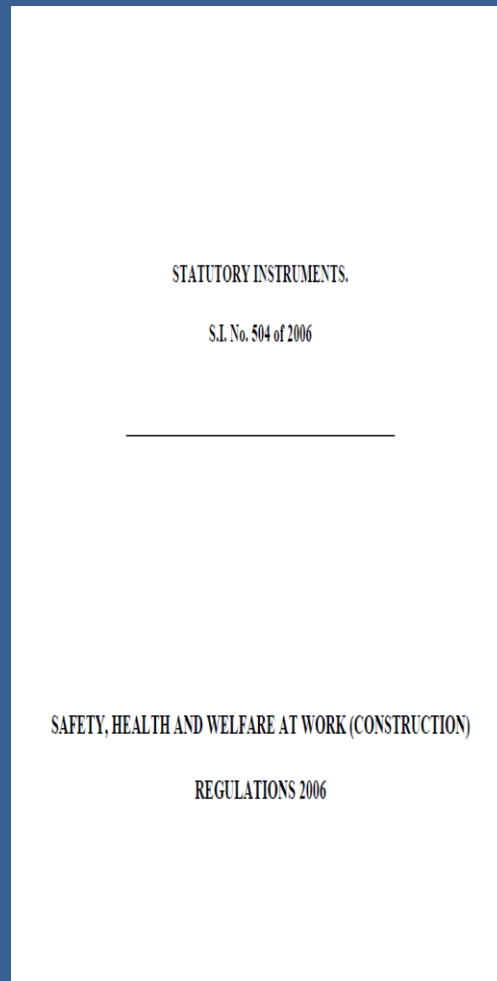
# The Duties of Engineers Under the Construction Regulations

Chemical and Process Engineering  
Division-Lecture Series 2011

Rochestown Park Hotel, 26<sup>th</sup> Oct

Eamon Egan

# Construction Regulations



# Construction Regulations / Engineers

- Clients
- PSDP
- Designers
- PSCS
- Contractors

Engineers act in each of these roles

# SHW@W (Construction) Regulations 2006

## Structure of Regulations

Part 1-(Regulations 1-5) Interpretation and General

Part 2-(Regulations 6-23)-Design and Management

Parts 3-14 (Regulations 24-105)-Contractors Duties

6 Related Schedules.

# SHW@W (Construction) Regulations 2006

## Important Definitions

“Construction work” -any building, civil engineering or engineering work and includes each of the following:

- “Doing” the following with respect to a “structure”-construction, alteration, conversion, fitting out, commissioning ,renovation, repair, upkeep, re decoration or other maintenance, decommissioning, demolition or dismantling.
- Preparation for a “structure”- site clearance, exploration, investigation and excavation, laying foundations etc.
- Assembly/disassembly of prefabricated elements of a “structure”
- Removal of a “structure” or part of a “structure”
- installation, commissioning, maintenance, repair or removal of mechanical, electrical, gas, compressed air, hydraulic, telecommunication and computer systems, or similar systems which are normally fixed within or to a “structure”

# SHW@W (Construction) Regulations 2006

## Important Definitions

“Structure” means

- any building, railway line or siding, tramway line, dock, harbour, inland navigation systems, tunnel, bridge, viaduct, waterworks, reservoir, pipe-line (whatever it contains or is intended to contain), underground or overground cables, aqueduct, sewer, sewage works, gasholder, road, airfield, sea defence works, river works, drainage works, earthworks, lagoon, dam, wall, caisson, mast, tower, pylon, underground tank, earth retaining element or assembly of elements, or element or assembly of elements designed to preserve or alter any natural feature, and any other structure similar to the foregoing
- Any formwork, falsework, scaffold or assembly of elements designed or used to provide support or means of access during construction work
- Any fixed plant in respect of work which is installation, commissioning, de-commissioning or dismantling.

# SHW@W (Construction) Regulations 2006

## Important Definitions

“Client” means a person for whom a project is carried out, in the course or furtherance of a trade business or undertaking, or who undertakes a project directly in the course of such trade, business or undertaking

“ Design” means the preparation of drawings, particulars, specifications, calculations and bills of quantities in so far as they contain specifications or other expressions of purpose, according to which a project, or any part or component of a project, is to be executed

“Designer” means a person engaged in work related to the design of a project

“Design Process” means the process for preparing and designing a project, including alterations to the design and the design of temporary works to facilitate construction of the project



# SHW@W (Construction) Regulations 2006

## Important Definitions

“Project” means any activity which includes or is intended to include construction work

“Project Supervisor” means an individual or a body corporate appointed under Regulation 6(1) and responsible for carrying out

- the appropriate duties specified in these Regulations, and
- Other duties that are assigned to the person by the client at the time of appointment and are necessary to allow the client to comply with Section 17(1) of the Act

“ Contractor” means

- A contractor or an employer whose employees undertake, carry out or manage construction work
- A person who carries out or manages construction work for a fixed or other sum and
- Supplies materials, labour or both, whether the contractor’s own labour or that of another, to carry out the work



# SHW@W (Construction) Regulations 2006

## Client Duties

- Appoint in writing/receive written confirmation from competent Project Supervisor for Design Process (PSDP) and Project Supervisor Construction Stage (PSCS) for each project
- Assess competence-Resources/Training/Knowledge/Experience
- PSDP appointment must be at or before start of design process
- PSCS appointment before commencement of construction work
- Appointments made, terminated, changed or reviewed as necessary

*Important exclusion-PSDP/PSCS appointment not necessary for routine maintenance, cleaning, decoration and repair if no particular risk, only one contractor and not notifiable (less than 30 working days/500 person days)*

# SHW@W (Construction) Regulations 2006

## Client Duties

- Only use competent designers and contractors-competence-Resources/Training/Knowledge/Experience-client must be ‘reasonably satisfied’
- Keep available safety file, pass on with property/structure, make available to PSDP, designers, maintenance etc for future projects
- Co-operate with PSDP and PSCS as necessary including in relation to time required for completion and provision of information
- Provide or arrange to have provided preliminary safety and health plan to those tendering/being considered as PSCS
- Notify H&SA of project “promptly” on making PSDP appointment

# Client Compliance

## BPC 3 Client Checklist

Client can use this checklist to track progress and health and safety compliance



Client:  Project:

Tick the appropriate box as tasks are completed. Note you may need to discuss some of these tasks with the PSDP and/or PSCS.

Client ticks if task is completed

### Section 1:

This section relates to procurement of the design team and PSDP.

- 1.1 Have you assessed the health and safety competencies and resources of each Designer? ☐
- 1.2 Have you appointed each Designer in writing? ☐
- 1.3 Have you assessed the health and safety competency and resources of the PSDP? ☐
- 1.4 Have you appointed the PSDP in writing? ☐
- 1.5 Has the PSDP confirmed acceptance of the PSDP role in writing? ☐
- 1.6 Does the project need to be notified to the Health and Safety Authority? ☐
- 1.7 Have you completed AF1 form and issued this to the Health and Safety Authority? ☐

### Section 2:

This section relates to the design process.

- 2.1 Have you issued the existing Safety File (if it exists) to the design team and PSDP? ☐
- 2.2 Have you issued all relevant information to the design team and PSDP? ☐
- 2.3 Have the design team and PSDP identified and assessed particular risks? ☐
- 2.4 Has the PSDP prepared the preliminary Safety and Health Plan? ☐

### Section 3:

This section relates to procurement of the contractor and PSCS.

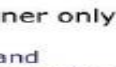
- 3.1 Has the preliminary Safety and Health Plan been issued to the tenderers? ☐
- 3.2 Have you assessed the health and safety competencies and resources of the Contractor? ☐
- 3.3 Have you appointed the Contractor in writing? ☐
- 3.4 Have you assessed the health and safety competency and resources of the PSCS? ☐
- 3.5 Have you appointed the PSCS in writing? ☐
- 3.6 Has the PSCS confirmed acceptance of the PSCS role in writing? ☐
- 3.7 Has the PSCS completed AF2 form and issued this to the Health and Safety Authority? ☐

### Section 4:

This section relates to the construction stage.

- 4.1 Has the PSCS developed the Safety & Health Plan? ☐
- 4.2 Is health and safety managed on site and discussed at site meetings? ☐
- 4.3 Is there checking and corrective action taken on site? ☐
- 4.4 Has the format for the Safety File been agreed with the PSDP? ☐



<b>BPC 1 Competency Assessment for PSDP/Designer</b>		 <small>HEALTH AND SAFETY AUTHORITY</small>
Client to assess competency, based on information submitted by the PSDP/Designer		
Designer: <input style="width: 90%;" type="text"/>	Project: <input style="width: 90%;" type="text"/>	
Tick duties being assessed: <input type="radio"/> PSDP and Designer <input type="radio"/> PSDP only <input type="radio"/> Designer only		
Where details or evidence is specifically requested, these must be attached to this questionnaire and submitted to the client. Questions marked "*" relate specifically to PSDP. All remaining questions must be answered by the Designer and PSDP.		
<b>Section 1:</b>		<b>Client ticks if response is adequate</b>
If you answer "yes", proceed to Section 2. If you answer "no", respond to the remaining questions first.		
<b>1.1 Do you have a third-party accredited Safety Management System (e.g. OHSAS 18001)?</b>		
<input type="radio"/> Yes <input type="radio"/> No   ➔	<b>1.2 Provide an outline of your Safety Statement (e.g. table of contents)</b>	
<div style="font-size: 2em;">↓</div>	<b>1.3 Provide evidence of how you manage health &amp; safety on your projects</b>	
	<b>1.4 Provide an example of how risk assessments are undertaken at design</b>	
	<b>1.5 Detail how you take account of the General Principles of Prevention</b>	
	<b>1.6 Provide an example of how you have designed out hazards</b>	
	<b>1.7 Detail how you assess competency for persons engaged in a project</b>	
	<b>1.8 Detail how you assess the health and safety resources required</b>	
	<b>1.9 Detail how you assess time required for completion of a project*</b>	
	<b>1.10 Detail how you take corrective action and issue directions*</b>	
<b>Section 2:</b>		
Answer all questions.		
<b>2.1 Provide details of similar projects previously completed</b>		
<b>2.2 Provide details of previous PSDP* and/or Designer appointments</b>		
<b>2.3 Provide details of experience of the staff you propose for this project</b>		
<b>2.4 Provide evidence of relevant qualifications and/or relevant safety training for staff</b>		
<b>2.5 Provide evidence of membership of professional bodies (e.g. RIAI, EI, ACEI)</b>		
<b>2.6 Detail how design safety is communicated and coordinated*</b>		
<b>2.7 Provide an example of a previous Preliminary Safety and Health Plan*</b>		
<b>2.8 Describe your processes for preparing a Safety File*</b>		
<b>2.9 Detail any accidents/incidents associated with your projects</b>		
<b>2.10 Detail any previous convictions/enforcement action by the Health and Safety Authority</b>		
<hr/> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">               In accordance with the Statutory Declarations Act 1938, I/we attest to the completeness, accuracy and truthfulness of the statements I/we have made in completing this form and to any information I/we have attached.             </div> <div style="width: 50%;"> <b>Signed by Designer/PSDP:</b>  <input style="width: 90%;" type="text"/> </div> </div>		
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"></div> <div style="width: 50%;"> <b>Date:</b> <input style="width: 90%;" type="text"/> </div> </div>		
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <b>Submission approved, signed by Client:</b>  <input style="width: 90%;" type="text"/> </div> <div style="width: 50%;"> <b>Date approved by Client:</b>  <input style="width: 90%;" type="text"/> </div> </div>		

# Client Competence and Resources Assessment

**BPC 2 Competency Assessment for PSCS/Contractor**

Client to assess competency, based on information submitted by the PSCS/Contractor

Contractor:  Project:

Tick duties being assessed: ☐ PSCS and Contractor ☐ PSCS only ☐ Contractor only

Where details or evidence is specifically requested, these must be attached to this questionnaire and submitted to the client. Questions marked "\*" relate specifically to PSCS. All remaining questions must be answered by the Contractor and PSCS.

**Section 1:**

If you answer "yes", proceed to Section 2. If you answer "no", respond to the remaining questions first.

1.1 Do you have a third-party accredited Safety Management System (e.g. Safe-T-Cert)?

☐ Yes ☐ No →

1.2 Provide an outline of your Safety Statement (e.g. table of contents)

1.3 Provide evidence of how you manage health & safety on your projects

1.4 Provide an example of how you assess risks for construction activities

1.5 Detail how you take account of the General Principles of Prevention

1.6 Provide an example of how you managed hazards for a similar project

1.7 Detail how you assess competency for persons engaged in a project

1.8 Detail how you assess the health and safety resources required

1.9 Detail how you implement and manage time constraints for a project\*

1.10 Detail how you take corrective action and issue directions\*

**Section 2:**

Answer all questions.

2.1 Provide details of similar projects previously completed

2.2 Provide details of previous PSCS\* and/or Contractor appointments

2.3 Provide details of experience for the staff you propose for this project

2.4 Provide evidence of relevant qualifications and/or relevant safety training for staff

2.5 Provide evidence of membership of trade associations (e.g. CIF, CIOB)

2.6 Detail how safety is communicated and coordinated\*

2.7 Provide an example of a previous Safety and Health Plan\*

2.8 Describe how you coordinate the implementation of safe working procedures\*

2.9 Detail any accidents/incidents associated with your projects

2.10 Detail any previous convictions/enforcement action by the Health and Safety Authority

In accordance with the Statutory Declarations Act 1938, I/we attest to the completeness, accuracy and truthfulness of the statements I/we have made in completing this form and to any information I/we have attached.

Signed by Contractor/PSCS:

Date:

Submission approved, signed by Client:

Date approved by Client:

**Client ticks if response is adequate**



# SHW@W (Construction) Regulations 2006

## PSDP Duties

- Take account of General Principles of Prevention in particular in sequential planning of the stages of the work and when estimating time required for completion of a project or stages of a project.
- Take account of any existing safety file or safety and health plan
- Organise cooperation between designers and ensure (reasonably practicable)coordination of their activities with a view to protecting safety, health and welfare of persons involved in construction work
- May appoint competent H&S Coordinator to assist
- Prepare a written safety and health plan on a ‘preliminary basis’ in sufficient time to provide it to those tendering/being considered for PSCS role

# SHW@W (Construction) Regulations 2006

## PSDP Duties-Preliminary Safety and Health Plan

Preliminary Safety and Health Plan-must include:

- General description of project
- Basis for deciding on time for completion of project
- Information on other work activities taking place on site
- Identify work with Particular Risks
- Include conclusions from designers re project risks
- Provide details on location of electricity, water and sewage connections to facilitate project welfare facilities.

PSDP must keep copy of preliminary safety and health plan for 5 years.

*Exclusion-no PSHP required if project is not 'notifiable' provided the work concerned does not involve a 'particular risk'*



# SHW@W (Construction) Regulations 2006

## PSDP Duties-Safety File

Prepare a safety file appropriate to the project and promptly deliver the safety file to the client on completion of the project.

Safety File must include relevant safety and health information to be taken into account during any subsequent construction work following completion of the project

Handover engineering document-suggest agree content early with client, PSCS and contractors.

# SHW@W (Construction) Regulations 2006

## SCHEDULE 3

*Section 8.*

### GENERAL PRINCIPLES OF PREVENTION

1. The avoidance of risks.
2. The evaluation of unavoidable risks.
3. The combating of risks at source.
4. The adaptation of work to the individual, especially as regards the design of places of work, the choice of work equipment and the choice of systems of work, with a view, in particular, to alleviating monotonous work and work at a predetermined work rate and to reducing the effect of this work on health.
5. The adaptation of the place of work to technical progress.
6. The replacement of dangerous articles, substances or systems of work by safe or less dangerous articles, substances or systems of work.
7. The giving of priority to collective protective measures over individual protective measures.
8. The development of an adequate prevention policy in relation to safety, health and welfare at work, which takes account of technology, organisation of work, working conditions, social factors and the influence of factors related to the working environment.
9. The giving of appropriate training and instructions to employees.

# Particular Risks

## Non-exhaustive List of Work Involving Particular Risks to the Safety, Health and Welfare of Persons at Work

1. Work which puts persons at work at risk of:
  - (a) falling from a height;
  - (b) burial under earthfalls; or
  - (c) engulfment in swampland.

where the risk is particularly aggravated by the nature of the work or processes used or by the environment at the place of work or construction site.

While work at height is not in itself a particular risk, if it is aggravated by other circumstances then it must be regarded as a particular risk.

2. Work which puts persons at work at risk from chemical or biological substances constituting a particular danger to the safety and health of such persons or involving a statutory requirement for health monitoring.
3. Work with ionising radiation requiring the designation of controlled or supervised areas as defined in Article 20 of Directive 80/836/Euratom.
4. Work near high-voltage power lines.
5. Work exposing persons at work to the risk of drowning.
6. Work on wells, underground earthworks, and tunnels.
7. Work carried out by divers at work having a system of air supply.
8. Work carried out in a caisson with a compressed-air atmosphere.
9. Work involving the use of explosives.
10. Work involving the assembly or dismantling of heavy prefabricated components.

# SHW@W (Construction) Regulations 2006

## Designers Duties

- Take account of the ‘general principles of prevention’ and any relevant safety and health plan and safety file
- Provide in writing to the PSDP all relevant information to enable the PSDP to carry out duties
- Cooperate with PSDP and PSCS to enable them to fulfil their duties
- Cooperate with other designers to enable them to comply with their duties
- Promptly provide in writing to PSDP or PSCS as appropriate
  - all information known to the designer re particular risks
  - all information known to the designer regarding nature and scope of the project
  - all information about the project necessary to complete the safety file
  - all information known to the designer necessary to ensure the safe construction of the design of the project (reasonably practicable)
- If no PS known to designer provide information above to appropriate contractor
- If not aware of PSDP appointment promptly inform client of client’s duties

# SHW@W (Construction) Regulations 2006

## PSCS Duties

- Further develop Safety and Health Plan before commencement of construction work, make adjustments to plan as work progresses, take account of safety statements, include specific measures for particular risks, include site rules and circulate plan to all contractors and others who may be affected.
- Co-ordinate implementation of General Principles of Prevention and monitor compliance by contractors
- Organise cooperation between contractors and ensure (reasonably practicable) coordination of their activities with a view to protecting persons at work and monitor on an ongoing basis.
- Ensure authorised persons only are present on-site (security of site)
- Ensure arrangements to allow for adequate welfare facilities are in place.
- Ensure arrangements are in place to collect and collate pertinent information for inclusion in the safety file by the PSDP.

# SHW@W (Construction) Regulations 2006

## PSCS Duties.

- Ensure that measures are in place to identify persons required to be in possession of statutory training registration card, and that records of these are maintained (Safe Pass, CSCS).
- Ensure that accident records are maintained and that notification of accident to relevant authorities occurs.
- Facilitate safety consultation
- Facilitate appointment of site safety representative where applicable and cooperate with same
- Notify the H&SA as necessary prior to construction.
- Where more than 100 persons are working on site, the PSCS must appoint a full time competent safety adviser.
- Optional-appoint a competent Health and Safety Coordinator.



# SHW@W (Construction) Regulations 2006

## Contractors-Main Duties – Regulations 24-105

- Comply with detailed regulations and schedules on specific work activities
- Co-operate with PSCS/PSDP
- Provide project related accident/dangerous occurrence information to PSCS
- Apply General Principles of Prevention (method statement, risk assessments of work activities)
- Consult with employees
- Provide FAS training as required-Safe Pass and CSCS and confirm to PSCS
- Provide site specific safety induction to all employees.
- Appoint Safety Officer if more than 20 employed on site
- Appoint Safety Officer if more than 30 on multiple sites.



# SHW@W (Construction) Regulations 2006

## How does an Engineer Comply

### As a Client:

- Is what you propose to do ‘construction work’
- Consider routine and planned maintenance
- Decide who will act as PSDP/PSCS
- Establish competence and resources for PSDP/PSCS (probably during tender process)
- Appoint in writing and get confirmation of acceptance
- Notify project to H&SA
- Designers/Contractors-establish competence before engaging
- Cooperate with PSDP/PSCS-provide all necessary information
- Hold all appointees to account during project-keep a watching brief.
- Maintain project files of all of the above

*Do not interfere unduly-once appointed let responsibility rest with the appointees.*

# SHW@W (Construction) Regulations 2006

## How does an Engineer Comply

### As a PSDP:

- Define the scope-be clear on where the appointment starts and stops-satisfy yourself that you are competent
- Have a defined process/procedure for the role
- Engage with all designers as early as possible
- Involve client in early engagement-need client support to be able to do it effectively
- Hold/chair design coordination meetings with a safety and health agenda-maintain records/maintain register of items to be resolved
- Legislative deliverables-preliminary safety and health plan and safety file-prepare and archive
- How to monitor design changes and temporary works designs during construction stage-challenge?
- Maintain project files of all of the above

# SHW@W (Construction) Regulations 2006

## How does an Engineer Comply

### As a Designer:

- Define the scope-be clear on what you are responsible for
- Have a defined process/procedure for the role-record design decisions, risk assessment outcomes etc.
- What constitutes design risk assessment? Constructability reviews? Change management procedures? Hazops?-all of the above dependant on project.
- Provide information in writing to PSDP or others as appropriate
  - general information on project
  - provide information on particular risks
  - any assumed construction methods and risk control measures
  - Design Certificates-not mandatory-some PSDPs may seek them
  - Safety File information
- Maintain project files of all of the above

# SHW@W (Construction) Regulations 2006

## How does an Engineer Comply

### As a PSCS:

- Define the scope-be clear on where the appointment starts and stops-satisfy yourself that you are competent
- Have a defined process/procedure for the role
- Notify project to H&SA
- Engage with client, PSDP and all contractors as early as possible
- Involve client in early engagement-need client support to be able to do it effectively
- Hold/chair regular contractor coordination meetings with a safety and health agenda-maintain records/maintain register of items to be resolved
- Legislative deliverables-construction stage safety and health plan
- Systems to coordinate contractors-pre start meetings, method statement reviews, risk assessment reviews, training records, safety statement reviews, site inspections, site rules, site security, consultation etc

*H&SA will focus on PSCS role during inspections of live projects-systems and supporting documentation must be robust.*

# The SHWW Act 2005 and Construction Work

Duties related to construction work.

**17.—(1)** A person who commissions or procures a project for construction work shall appoint in writing a competent person or persons for the purpose of ensuring, so far as is reasonably practicable, that the project—

- (a) is designed and is capable of being constructed to be safe and without risk to health,
- (b) is constructed to be safe and without risk to health,
- (c) can be maintained safely and without risk to health during subsequent use, and
- (d) complies in all respects, as appropriate, with the relevant statutory provisions.

(2) A person who designs a project for construction work shall ensure, so far as is reasonably practicable, that the project—

- (a) is designed and is capable of being constructed to be safe and without risk to health,
- (b) can be maintained safely and without risk to health during use, and
- (c) complies in all respects, as appropriate, with the relevant statutory provisions.

(3) A person who carries out construction work shall ensure, so far as is reasonably practicable, that it is constructed to be safe and without risk to health and that it complies in all respects, as appropriate, with the relevant statutory provisions.

(4) For the purposes of this section, ‘project’ means any development which includes or is intended to include construction work.



# HSA Resources

