

SOLID FOUNDATIONS: HOW DESIGN AND COLLABORATION DRIVE A SAFETY CULTURE

JIM LEAHY

INTRODUCTION

Collaboration can be broken down into component parts , **the ‘3Cs’**

- Coordination
- Cooperation
- Communication

All three are essential to effective design risk management.

Looking at the requirements of legislation regarding the 3Cs and how a good safety culture can contribute to the overall success of a project

LEGISLATIVE REQUIREMENTS

Design

In carrying out work related to the design of a particular project, a designer shall promptly provide in writing to the PSDP or PSCS, whichever is appropriate, all information -

- a) about the project that is known to the designer regarding particular risks.....
- b) regarding the nature and scope of the project to the extent necessary to enable the project supervisor to comply with these Regulations,
- c) about the project that is necessary for that project supervisor to prepare the safety file, and
- d) that is known to that person and is necessary to ensure, so far as is reasonably practicable, the safe construction of the design for the project.



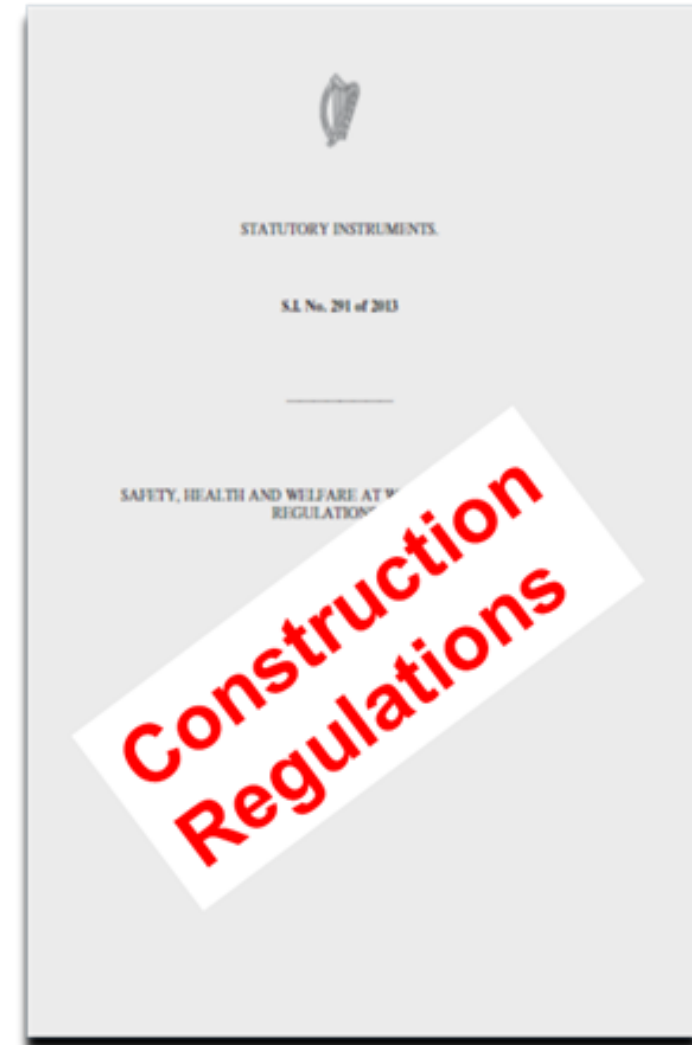
Non-standard design, not obvious, particular phasing

Communication

Design

- In carrying out work related to the design of a particular project, a designer shall—
 - **co-operate** with the project supervisor for the design process or the project supervisor for the construction stage, as appropriate,.....
 - **co-operate** with other designers, as appropriate.....
 - **comply with all directions** from the project supervisor for the design process or the project supervisor for the construction stage.....

Cooperation

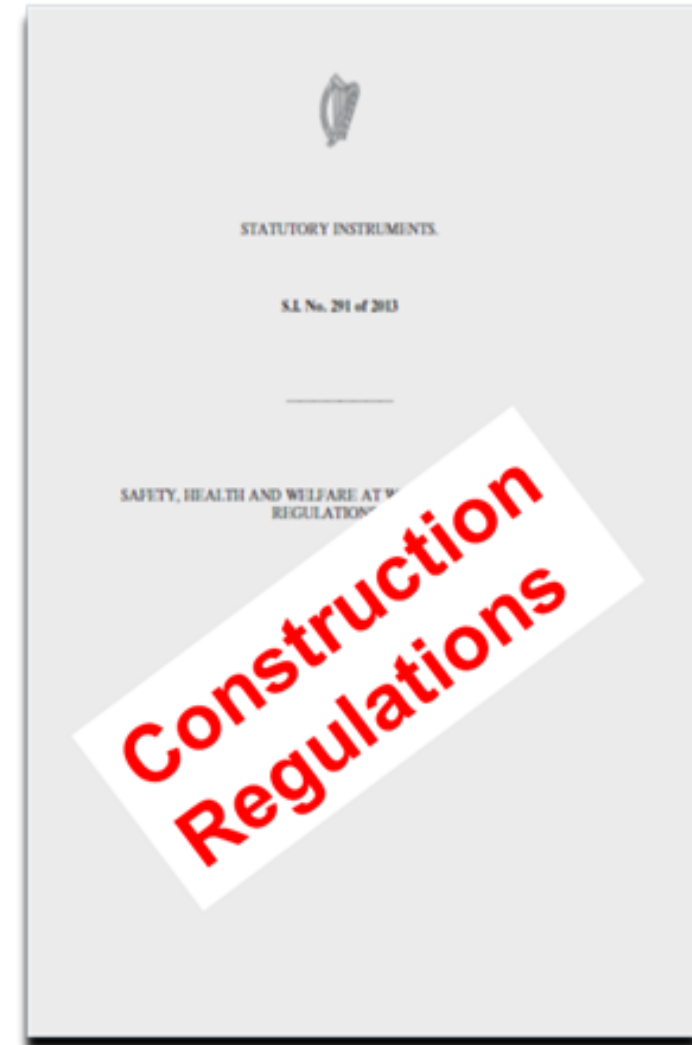


PSDP

The project supervisor for the design process shall

- take account of the general principles of prevention during the various stages of the design and preparation of a project, in particular –
 - when either, or both, technical or organisational aspects are being decided,....
- organise co-operation between designers on the same project and, so far as is reasonably practicable, ensure co-ordination of their activities in relation to the design of the project with a view to protecting the safety, health and welfare of persons involved in construction work.”

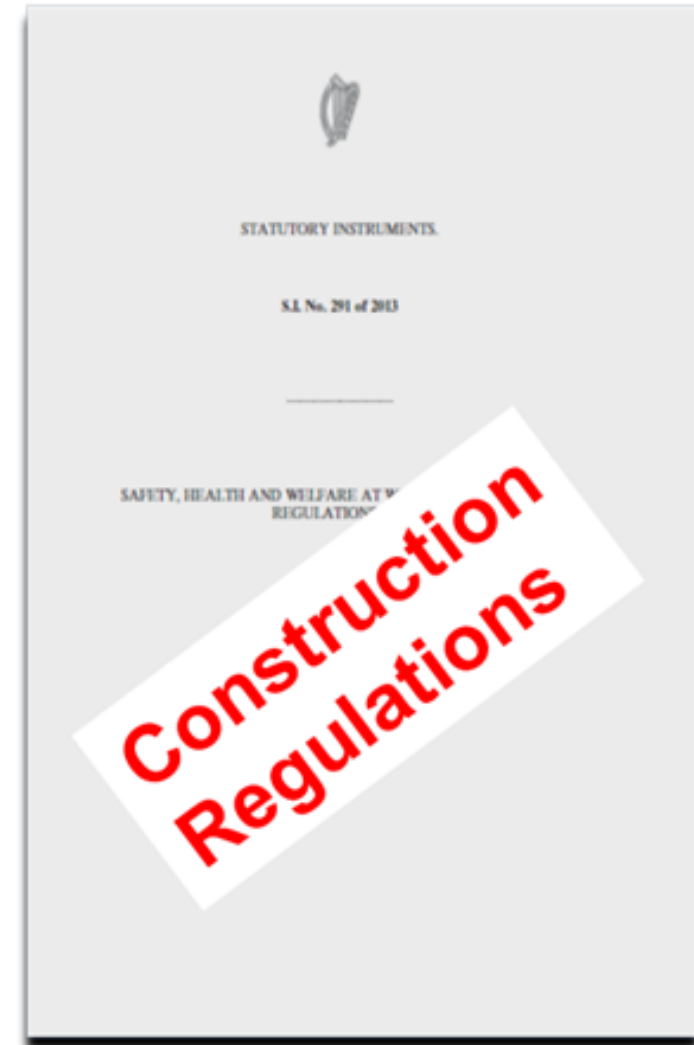
Coordination



CLIENT

A client shall co-operate with the project supervisor for the design process and the project supervisor for the construction stage, as appropriate, including in relation to the time required for the completion of the project and by providing information to enable the relevant project supervisor to comply with these Regulations.

Communication



PSDP / DESIGNER PRE-CAST BEAMS 2006 CASE

A construction company was fined a total of €25,000 by the Circuit Court.

.....a large beam fell, injuring three workers during the building of a bridge.

The company pleaded guilty to failure as the **project supervisor design stage** **to identify in the preliminary health and safety plan** the risk of potential instability of large pre-cast beams used in the construction and

failure to ensure that the supports and other fixings provided to prevent a structure from collapsing were designed, installed and maintained to withstand stress and strains placed on them.

The company was fined €12,500 on each charge and ordered to pay €25,000 in costs.

Communication

SAFETY CULTURE

"The way we do things around here"

Safety Culture refers to the collective mindset, values, and practices within an organization that prioritise safety in daily operations. It goes **beyond compliance** with regulations and influences how employees think about, approach, and act on safety-related matters.

Safety culture is the element of organisational culture which is concerned with the maintenance of safety and compliance with safety standards

What does collaboration look like?

Collaboration can be broken down into component parts , the '3Cs'

- Coordination
- Cooperation
- Communication

What does collaboration look like?



No one size
fits all

- Coordination
- Cooperation
- Communication



PSDP to

‘be satisfied that the design process addresses the need to eliminate hazards and control risks’

Coordination

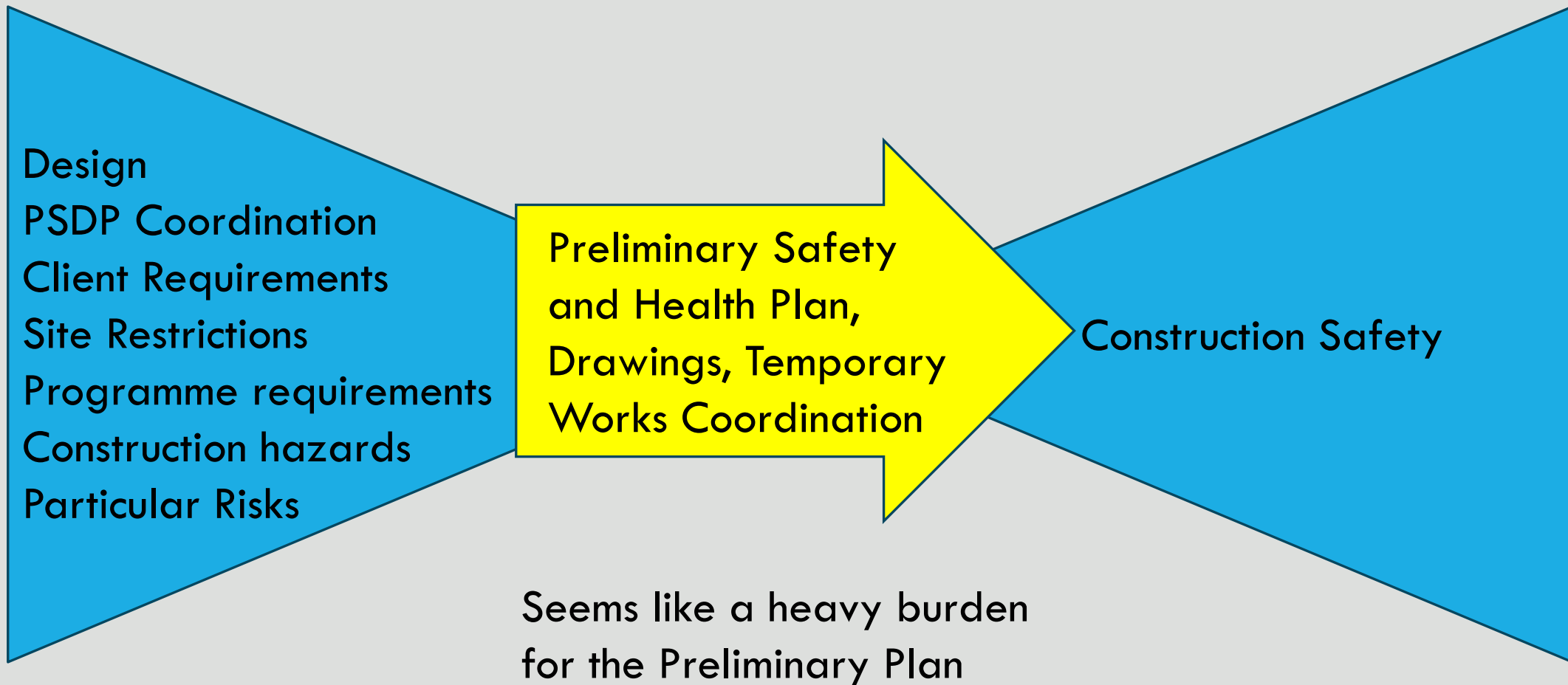
What we do here
(Culture)

What we do here
(Culture)

Design

Construction

Link between Design and Construction – a basic safety culture



Link between Design and Construction – a better safety culture



Link between Design and Construction – an excellent safety culture

Design

What we do here

Construction Safety

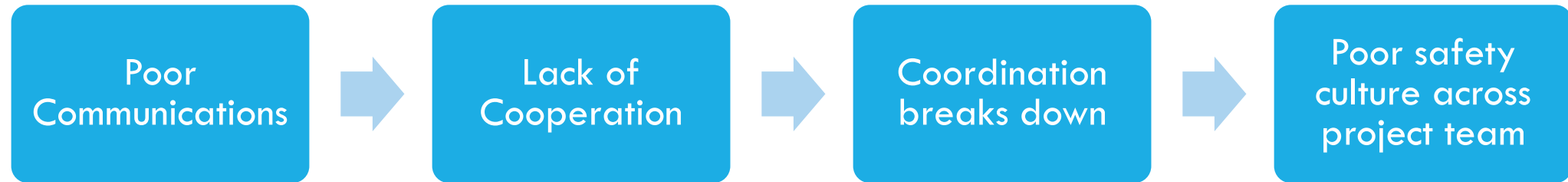
Preliminary Safety and Health Plan, Addenda to Prelim Plan, Drawings, Works Requirements, Progress Meetings, PSDP/PSCS Meetings, Temporary Works Coordination, Services Coordination, Communication of Design Changes, Requests for Information, Ongoing discussions, **Lessons learned, Client standards, Sharing of information, Feedback, Listening, Frameworks, Client auditing, HAZIDS, HAZOPs, CHAZOPS, Access, Lifting and Maintenance Review (ALM), Use of TWDC D&B, Updating DRAs**

**Coordination
Cooperation
Communication**

WHAT CAN GO WRONG IF THERE ISN'T APPROPRIATE COLLABORATION AT DESIGN STAGE

1. Constructability issues – contractors unaware of particular construction requirements
2. Future maintenance unhappy with design
3. Appearance of lack of attention to safety issues during design sets a poor tone

GOOD COMMUNICATION IS IMPORTANT



- Contractual issues
- Poor tone
- Never ending
- Always written

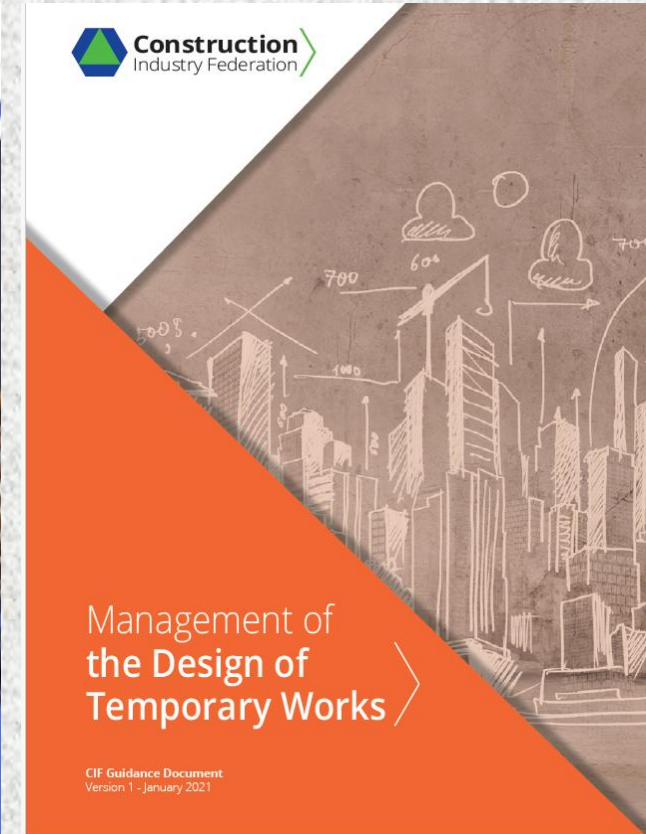
Strike a balance

TEMPORARY WORKS COORDINATOR

‘For larger projects, particularly where the scaffolding will be complex and involve support from the permanent building structure, a Temporary Works Co-ordinator (TWC) should be appointed to assist the Project Supervisors in carrying out their duties.’

Scaffolding CoP

Well worth having on a lot of projects. Increases the knowledge and the collaboration. Protects the workers.



Good References

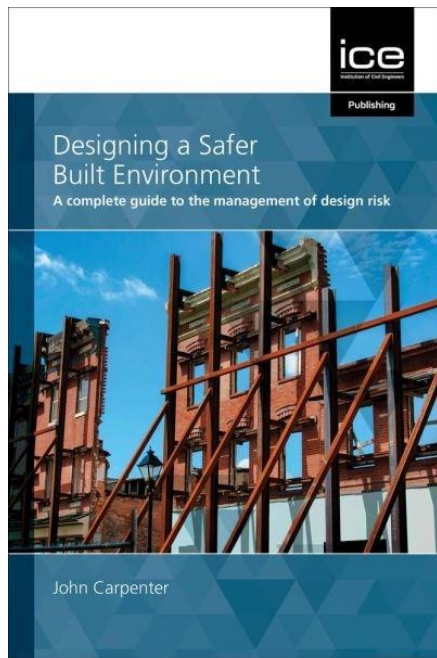
CDM 2015 – construction work sector guidance for designers, fourth edition



CIRIA C755



HSE UK L153



John Carpenter



Designing a Safer Built Environment
A complete guide to the management of design risk

CIRIA C686

London

Safe access for maintenance and repair. Guidance for designers second edition 2009

Updated for CDM2007 and other new legislation

J Iddon
J Carpenter

CIRIA C686

CIRIA
Classic House, 174-180 Old Street, London EC1V 9BP
TEL: +44 (0)20 7549 3300 FAX: +44 (0)20 7253 0523
EMAIL: enquiries@ciria.org WEBSITE: www.ciria.org

Health & Safety Expert Panel Briefing Note

ROOF WORK: MAINTENANCE AND REPAIR

Introduction

All designers will recognise the potential for harm when their design involves construction, maintenance or repair relating to roofs or items on roofs.

This note concentrates on maintenance or repair of items requiring access onto roofs and is written to enable a consistent approach to the risk management of such work.

The Designer 'owning the design risk' will be the specifier/designer of the items: these items may be M&E plant, ventilation cowl, drainage sumps and the like.

NOTE This example is designed to provide further information to assist the designer when considering the HSE guidance (L153) paragraph 86.

Example

The following example is used to illustrate the principles of appropriate risk management and decision making.

Air Handling Units on a flat roof, without envisaged barriers or upstand.

Access required 6 monthly to change filters.

Major maintenance required at 12 monthly intervals

Unit replacement every 10 years.

Roof is accessed via internal secure stair from top floor of building.

No access to roof other than to authorised personnel.

The AHU are positioned in the most advantageous position from an energy efficiency perspective, the need to minimise pipe runs and the desire to position above convenient vertical riser locations.

This has resulted in the items being placed near the roof edge. This is an engineering/cost based decision.

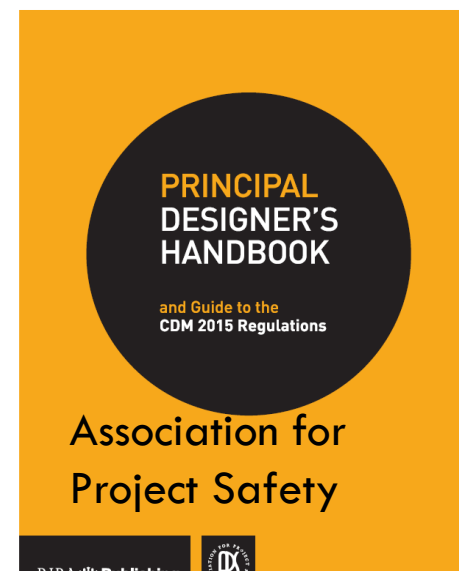
A WORKING AT HEIGHT

Definitions

The Designer should define a working space around the items which reflects the nature of the anticipated maintenance work eg temporary laying out of parts, opening access panels

Health & Safety: Roof works

Institution of Civil Engineers



Association for Project Safety

Designing for Safety in Construction



Design Risk Management Guidance.

JIM LEAHY RPS 01/05/25

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