

RPS

The Safety, Health and Welfare at Work (Construction) Regulations

The PSDP, the Designer and Design Risk Assessment

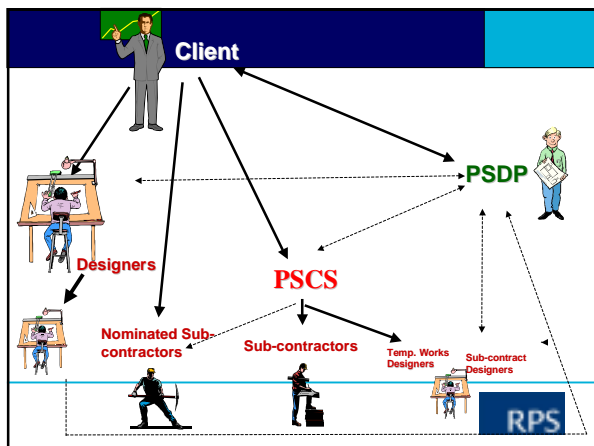
Jim Leahy C.Eng CMIOSH 14th March 2007

www.rpsgroup.co.uk/instand

Presentation Agenda

- The PSDP *What they are supposed to do, how to go about doing it and how to demonstrate it was done !*
- The Designer
- Design risk assessments
- Common issues

RPS



Duties of PSDP

- a) Take account of Gen Principles of prevention
 - In particular : Technical or organisational aspects, planning, Estimating the time required
- b) Take account of any existing Safety File/ Safety Plan
- c) **Organise co-operation, ensure coordination** of the work of other Designers involved ...with a view to protecting H&S.....
- d) Provide relevant information to the PSCS for inclusion in the Safety Plan
- e) For projects which require a Health and Safety Plan, prepare a Preliminary Health and Safety Plan
- f) *Prepare the Safety File*
- g) *Coordinate the Design of Temporary Works*

RPS

What HSA Expected of the PSDS

Letter from HSA to Consultant following an accident looked for :

1. Confirmation of appointment to the role of PS(D)S
2. Documented proof demonstrating co-ordination of the activities of Designers i.e., memos, minutes of meetings, records of telephone calls, etc.),
3. Demonstration of hazard identification and risk assessment at the design stage carried out by any Designer
4. The Preliminary Health and Safety Plan
5. Any Specifications or design documents relating to the installation of the structure in question.

RPS

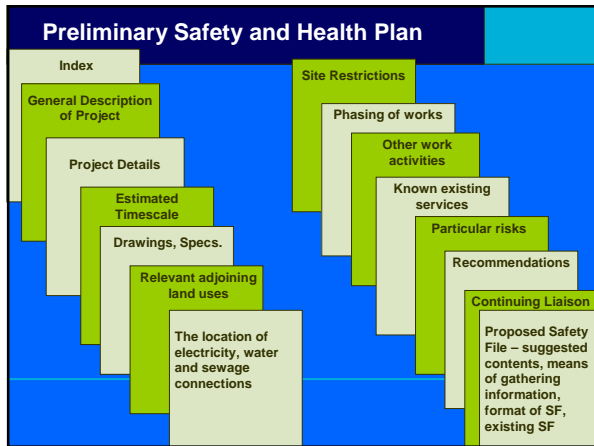
Coordination of Designers – Role of PS(D)P

PS(D)P must :

- Ensure information flows freely between designers
- May need to encourage or arrange design meetings if not sufficient interaction between designers or adequate regard not being given to H&S
- Check if adequate information is provided


- *Safety Review meetings are preferable to just receiving risk assessment sheets individual designers as each designer will become aware of other issues*

RPS




Preliminary Health and Safety Plan

- Doesn't have to be a long document
- Shouldn't list normal construction risks
- Is a means of informing the PS(C)S of risks that may not be obvious from the drawings to a competent PS(C)S/Contractor
- Must list particular risks



Duties of Designers

- Take account of the General Principles of Prevention
- Take account of any Safety Plan / File
- Communicate necessary control measures, design assumptions or remaining risks – IN WRITING !
- Co-operate with PSDP or PSCS
- Provide information on particular risks
- Comply with any direction from PSDP or PSCS
- Where no PSDP has been appointed, inform the Client that a PSDP must be appointed.
- Information required for the Safety File is now specifically mentioned in Designers' duties.



Design Definitions – 2006 Regs.

- “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

RPS

General Principles of Prevention

- Use ‘Best Practice’ and approved Codes of Practice to comply with General Principles of Prevention

RPS

- Design Risk assessment

RPS

Risk Assessment

- What can go wrong ?
- Who are affected ?
- How serious are the consequences ?
- How likely is it to occur ?
- What can we do about it ? Remove ? Substitute ? Control ?
- If hazard remains pass on the information to those affected.

RPS

Risk Assessment - No Standard Method

- No "Standard" method of Risk assessment exists. However the following mathematical formula provides a guide:-

Risk = (Probability of a hazard occurring) X (the severity of the consequences).

RPS

		1	2	3	4	5
		Unlikely	Low	Medium	High	Certain
C	Property Damage	2L	3L	3M	4M	5M
	Minor	2L	4M	6M	3M	
E	Moderate	3L	5M			
	Serious	4M	2M			
P	Fatality	5M				
	Multiple fatalities					

Severity	Likelihood
1. Minor Property Damage Only	1. Unlikely (probably will not occur)
2. Minor Injury – (First Aid only)	2. Low (may occur)
3. Moderate (Over 3-day Injury) (and/or possible Improvement Notice)	3. Medium (could occur)
4. Serious (Immediately reportable injury) (and for possible Prohibition Notice Prosecution)	4. High (near certain to occur)
5. Fatality or multiple fatalities	5. Certain (will occur)

Realistic Limitations in Design Risk Assessment

- Construction is 'dynamic'
- Opinions differ

ALSO :

- Designer does not have Contractor's expertise
- Cannot hope to identify all hazards
- Reasonably practicable solutions
- Can only address the risks at the time the design is being prepared

RPS

Unhelpful Design Risk Assessments ?

Activity	Hazard	Risk	Who is at risk ?	Risk Rating	Reduction / Elimination / Mitigation Measures.	Residual Risk Rating	Comments / Recommendations
Lifting new beam units over roadway	Unit may fall	Damage Injury	Site staff, public	M	1.Methods of lifting to be approved 2. Dedicated lifting points to be designed in 3. Road to be closed 4. Correct lifting techniques to be used, inspection and maintenance of lifting gear	L	1. Use of mobile crane envisaged. 2. Contractor to submit detailed method statement and calculations

RPS

Residual Hazards ?

Adequate information required ?

Activity	Hazard	Risk	Who is at risk ?	Risk Rating	Reduction / Elimination / Mitigation Measures.	Residual Risk Rating	Comments / Recommendations

Consideration should be given to the possibility of residual hazards remaining after the implementation of the proposed risk reduction measures.

Consideration should be given to the possibility of residual hazards remaining after the implementation of the proposed risk reduction measures.

Consideration should be given to the possibility of residual hazards remaining after the implementation of the proposed risk reduction measures.

Consideration should be given to the possibility of residual hazards remaining after the implementation of the proposed risk reduction measures.

Consideration should be given to the possibility of residual hazards remaining after the implementation of the proposed risk reduction measures.

Paper Trail ?

- Risk assessments ?
- Recording of decisions taken ?
- Hazard Management suggested by HSE, ACEI

www.hse.gov.uk/construction/design/alternative.htm

RPS

Design Risk Assessments or Hazard Management List

The headings for the columns in the Hazard Elimination and Management List could be (HSE) :

- Activity
- Hazard
- Persons at Risk
- Design measures taken to eliminate or reduce the hazard
- Information provided about the residual hazards
- Date issue raised
- Action required by (name)
- Date actioned

www.hse.gov.uk/construction/design/alternative.htm

RPS

Need for Design Hazard Management / Risk Assessment

- Legislation
- Personally liable ?
- Prevent rising costs
- Potential Prosecutions
- Quality Systems
- Need back up in event of accident
- ACEI /ICE Guidelines
- HSA Guidelines
- Moral duty
- Providing proof of competence / resources
- Auditing

RPS

Design of Temporary Works Coordination

- What will be known as Temporary Works ?
- Expected to include :
 - What is required to ensure stability during the construction, alteration or demolition
 - Formwork, falsework, scaffolding, sheet piling, temporary bracing
 - Traffic management plans

If something requires 'design' then it must be co-ordinated by the PSDP

RPS

Practical Temporary Works Coordination

- *Identify what temporary works are expected*
- *Need to be kept in the loop by the contractor*
- *Site visits MAY be necessary*
- *Too late to look for design certificates* when temporary works are constructed.*

* Design Certificates Suggested in HSA Guidance to Con. Regs.

RPS

Common Problems

- Clients unaware of duties
- Clients unwilling to pay for service
- Design changes during construction not being assessed
- Designers not considering buildability ?
- Design starts when ?
- Risk assessment too late – cost implications
- Safety File not considered
- Prel Plan listing normal construction hazards and loses it's effectiveness
- Risk Assessments not really helpful
- Lack of coordination
- PSDP and Designers have other roles that conflict with H&S agenda

RPS

Traditional and other types of Contracts and the role of the PSDP

- Traditional Contracts : straightforward
 - DB, DBO, PPP Contracts
- Client's Rep. appointed PSDP for first stage (to tender stage)
- Initial Preliminary H&S Plan to comply with duties as PS(D)P
- Change of appointment (by Client !) of PS(D)P to Contractor/Consortium (successful tender)
- Contractor acting as Designer
- TACKLED IN 2006 Guidelines : Tenderers (as Clients) should appoint their own PSDP for tender bids.

RPS

Useful Guidance



- *ACEI Guidelines
- *CIRIA C604 Guidance for Designers
- *HSA Guidelines to 2006 Con. Regs.
- *HSE website eg. Red, Amber and Green List
- *safetyindesign.org
- HSA aCOPs for underground services, roofwork (design elements included)
- HSA Guidance Documents on Working with Asbestos, Excavations
- CIRIA C603 – Practical Guidance for Planning Supervisors
- HSE aCoP to CDM (February 2002)

Presentation Summary

•The PSDP – co-ordination, temporary works, Preliminary Plan, Design Safety Reviews

•The Designer- Design Risk assessments (Hazard management), information in writing, Safety File

RPS
