

The Delivery Hub health, safety and environment Raising the bar 10 Communication of risk

Version 1 - March 2013

Contents

Objective	Page 3
Background	Page 3
Minimum requirement	Page 3
Minimum visual standards	Page 5
Desirable	Page 6
Monitoring effectiveness	Page 8
References	Page 8

Objective

The objective of this raising the bar document is to improve the communication and understanding of risk controls for construction activities.

Background

Effective communication of risk controls is an essential part of the risk assessment process.

The Management of Health and Safety at Work Regulations 1999 require that the significant hazards together with the identified control measures are briefed to those who are at risk (not just those involved in the task).

Feedback received from the Highways Agency supply chain, during the 2012 Major Projects site safety workshop, identified that communication of risk as an area of potential weakness and that this is a priority issue within the highways sector.

The Health and Safety Executive guidance document [Five Steps to Risk Assessment](#) provides a structured approach to the process:

1. Step 1 – Identify the hazards
2. Step 2 – Decide who might be harmed and how
3. Step 3 - Evaluate risks and decide on precautions
4. Step 4 - Record the findings and implement them
5. Step 5 - Review and update the assessment.

It is assumed that each delivery partner has a robust risk assessment procedure and that appropriate documented assessments are produced and that risk reviews are undertaken in accordance with CDM.

This document focuses specifically on methods to promote better understanding of the defined controls at operational level.

Minimum requirements

Engagement

Early engagement with the risk assessment process encourages ownership of risk controls. Hence the immediate supervisor of the work activity must be involved in the development of the risk controls. This should be in conjunction with the construction and health and safety teams.

Consultation with workforce, representatives, supply chain and external specialists (as appropriate) during risk identification process and during risk review. These groups may be aware of issues unknown to others and by consulting with them they will feel valued and also more likely to buy-in to the process.

Briefings

These are the standard approach to communicate risk. The risk controls for each task must be communicated to those undertaking the task and those likely to be affected by the work.

Inductions should address the generic risk controls on a project and thereafter risk control briefings are required each time a new task / activity is undertaken or where new personnel are deemed to be at risk. Periodic refresher briefings are to be conducted at least monthly.

Daily point of work risk assessments and briefings are to be conducted to identify the need for any additional controls due to changes in circumstance. These are to be completed by the gang immediately before the works start as a final check and a means of giving them some ownership for their work area.

Regular toolbox talks on relevant risk topics should be conducted at least weekly. These will include lessons learned from site surveillance, incident and near miss reporting.

In order to maximise the effectiveness of these briefings the briefer should consider the following key points:

- Concentrate on the significant risks and keep the briefing focused and concise.
- Know the target audience and use appropriate language.
- Demonstrate an empathy with the audience by using real life scenarios that they will associate with.
- Talk naturally as you would to a friend, people do not respond well to being patronised.
- Interact with the audience and check understanding by asking questions.

Hold monthly safety committee / leadership meetings involving the supply chain to discuss wider project issues such as trends, new initiatives, near miss / accident outcomes and forthcoming changes to the site controls.

Competency

All persons involved in the process of communication of risk controls should hold a minimum competency of:

- CITB SSSTS - Site supervisor's safety training scheme (2 day), or
- FPS - Federation of piling specialists - supervisor course (2 day), or
- IOSH – Managing safely (4 day).

Tools

The purpose of the following tools is to enhance the communication process.

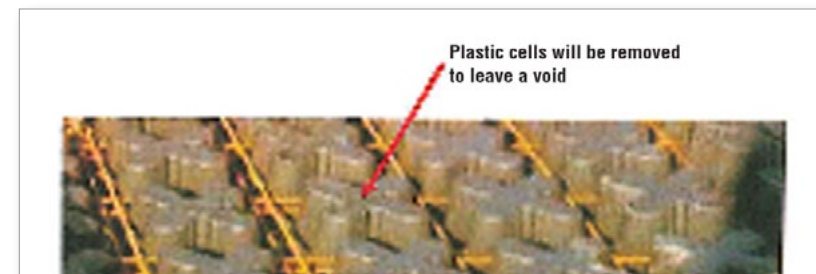
Use of visual aids in safe systems of work

Construction processes and sequences can be fairly complex and difficult to convey to the workforce. Communication can be enhanced by incorporating sketches and photographs into the documented safe systems of work.



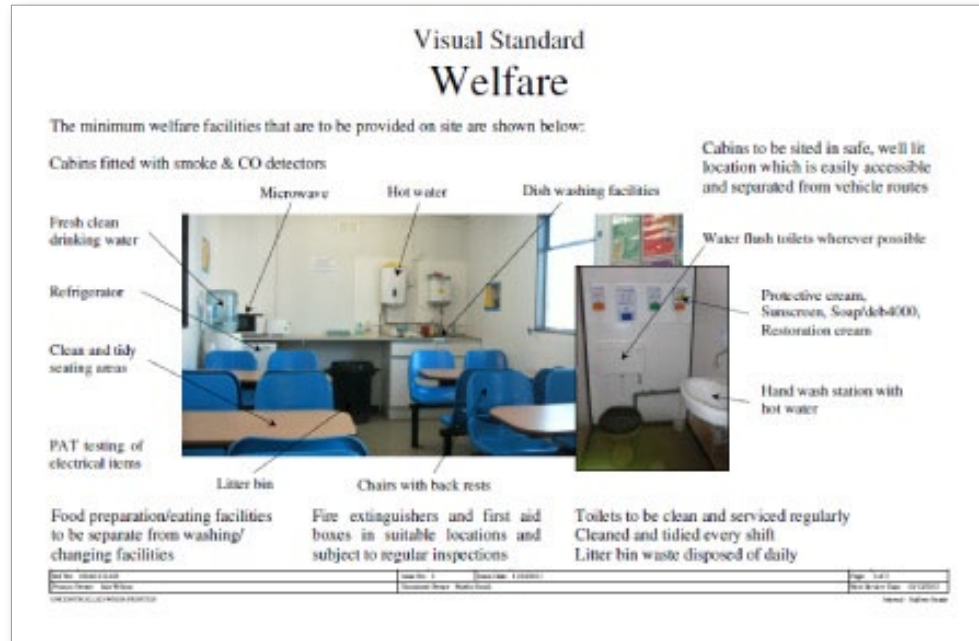
This offers clarity in the form of visual representation and assists the supervisors to communicate the risks and control measures.

Copies of safe systems of work must be available to the workforce at the point of use



Minimum visual standards

In many circumstances visual standards are an appropriate and simple communication tool to improve the understanding of what good looks like. They can cover a range of topics appropriate to the activities being performed on the project.



They may be used as toolbox talk topics and should be produced in poster form and displayed in prominent positions for the workforce.

The effectiveness of the visual standards is further enhanced by the use of actual site photographs as this helps to personalise the message. Please see [Highways Agency health and safety toolkit number 328, what good looks like](#).

Highways Agency - Raising the bar documents

These documents have been produced to assist in improving the management of health and safety on Highways Agency projects. The content is clear and concise and text is supported by site photographs.

The use of the documents should be promoted by the construction teams and the

supply chain

THE DELIVERY HUB HEALTH, SAFETY AND ENVIRONMENT - RAISING THE BAR 7
Overhead structures and services protection - Version I - November 2012

- Consideration must also be given to any change in working widths or site boundaries. For example, if the site is normally a hard shoulder closure during the day, but possession of the live carriageway is taken at night, the continued protection of the overhead hazard must be maintained.
- Implement appropriate permit to work system for work activities in close proximity to overhead structures.
- The default sleeve colour of the blue cone should be white with black lettering stating **'Caution overhead structures'**. However to distinguish between overhead structures and overhead services, consideration shall be given to replacing the white sleeve of the cone with a yellow **'Danger overhead cables'** sleeve.
- Connecting the cones using blue and white chainrope is also an effective visual option.
- Electronic visual and audio warning systems
 - Technology such as magic eye' systems may be used as an additional visual and audio warning to oncoming drivers that their vehicle is too high for the approaching structure.
 - The provision of warning sensor devices attached to the, tipper body of a vehicle will also provide an audible warning to the driver in the proximity of overhead structures. This will reduce the risk of an impending collision with a structure and the possible injuries that could occur when operating, tippers, jobs, etc. Warning devices for overhead structures are simple and easy to fit to existing plant, and very cost effective. Any such device will be required to be tested/checked daily.
 - Where appropriate consideration should be given to plotting all overhead structures and services in a GPS system/satellite navigation unit that has an audible warning alarm to warn when machines are encroaching towards the structure.

Desirable
Creating a higher visual standard

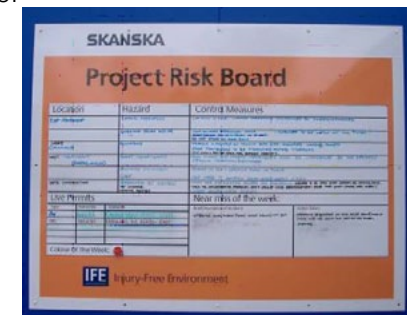
- When working near overhead hazards consideration shall be given to providing supplementary lighting to ensure to ensure adequate visibility is provided. In addition, the presence of blue cones should be emphasised by using a series of steady lamps, especially where work is to be undertaken at night or during periods of low light. A lamp placed on the first cone and then every 5m thereafter will ensure the cones are suitably highlighted.

continued

<< Contents Email: DeliveryHub@highways.gsi.gov.uk >>

Site information boards / hazard information boards

The most recent safety information should be displayed on information boards where the workforce can access them. Information boards will be located at the site compound and throughout the worksite.



They should be used to display safety alerts, lessons learned and key risk controls. Information will include feedback on issues raised by the workforce via the hazard and near miss reporting processes. Please see [Highways Agency health and safety toolkit number 327 project risk boards](#).

Monitoring effectiveness

Supervisor's checks

To be conducted daily to determine whether risk controls have been implemented by the site teams and are effective in managing the specific hazard. Where additional hazards have arisen from the activity after implementation, the supervisor to implement controls, brief the workforce and update the risk assessment.

Risk reviews

Undertake a review of the risk assessment controls at least quarterly. Document any changes to the control measures and communicate these changes.

Desirable

Briefings

All workforce and supervisors to attend weekly safety workshops where risk control is included on the agenda. These should encourage two-way communication and provide opportunity for the workforce to feedback their ideas for improvement.

Competency

Consider enhancing the communication skills of the group who are responsible for communicating risk controls. Consider training, mentorship and assessment in the following:

- Presentation skills
- Delivering safety critical communications
- Influencing and negotiating.

Tools

The following is a selection of optional tools that can be used to enhance communication:

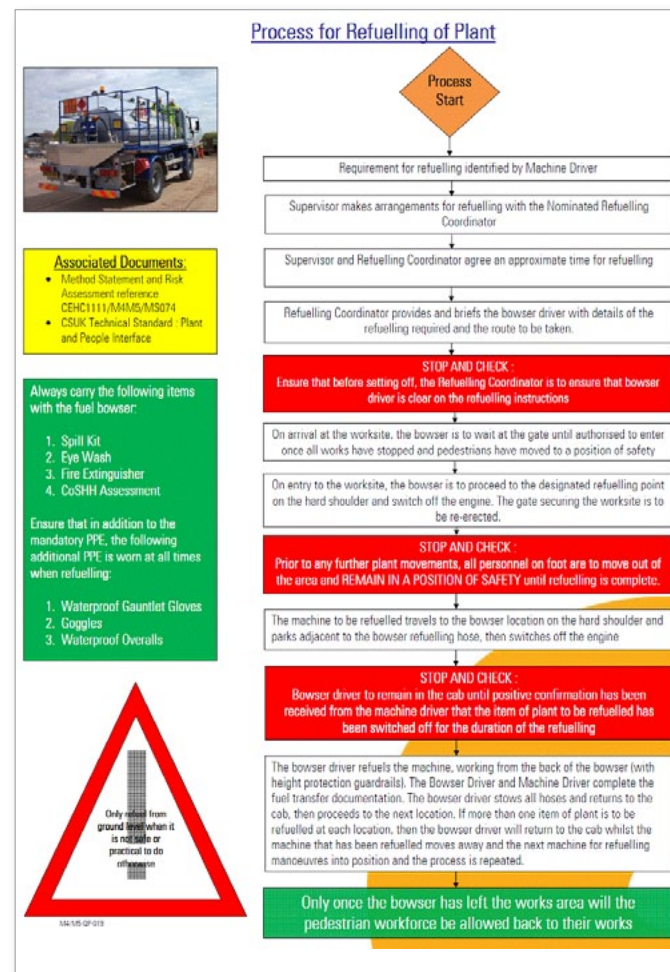
Flowchart procedures

A flowchart provides an effective method to break down a safety procedure into a

series of logical steps. The steps will prescribe a series of actions to be undertaken and in which order.

A series of hold points can be incorporated which prompt the person responsible to undertake prescribed and, if necessary, documented checks before they can proceed onto the next stage.

The flowchart can be further enhanced by using colour, photographs, signs and sketches.



The flowcharts can be displayed on information boards, induction / training rooms and mess rooms.

Computer modelling

Use of 3D animated models to provide a visual simulation of planned activities and to help visualise the risks and plan the working area. Whilst the initial base images take time to generate, addition of the items of plant and individual objects / structures can be inserted and moved around very quickly using the computer model.

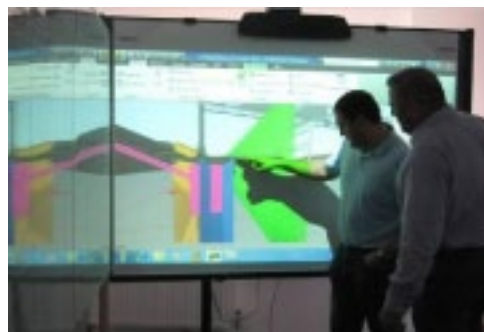


The time and cost benefits are realised for larger and potentially higher risk activities such as the sequencing of multi-crane lifts.

Interactive whiteboards and televisions

These can be used in conjunction with 3D models. The interactive whiteboards is and interactive 80 inch screen and a projector which are connected to a laptop / desktop computer.

Effectively the finger becomes the mouse on the screen to navigate around the 3D model. Whiteboards are useful tools to engage construction teams in technical issues and



programming of works. Clearly this can include risk control. The system captures the output of the start / end of shift discussions in a format that can be emailed out

at the end of the meeting.

A similar system may be adopted with interactive television screens.

Physical props

Display boards – An example is a display board used to raise awareness of the different types of cables in the ground. A wide variety of cables encountered on a project were mounted a board together with examples of unsafe / damaged cables and joints.



This display proves a powerful tool as it raises awareness of what the different cables look like, dispelling any myths amongst the workforce that it is only the bigger cables that can do harm.

Used as a regular briefing tool and referred to within the site induction, this

visual display has literally raised eyebrows amongst the workforce as its purpose is explained.

Scale models– Models can be set up in precise scale and detail, recreating the exact method of working on site.

They can be used to assist planners in the development of safe systems of work, for example, by improving understanding of interface risks. They can also reinforce workforce briefings to highlight key risk controls such as



demarcated safe zones / separation of activities.

Key cards – These are pocket sized cards which can be issued to supervisors and the workforce for day to day use. They can be tailored to suit the needs of the project to enhance communication of risk. The example above shows one of a series of cards which were used to help promote the need to wear appropriate eye protection. The graphic nature of the content helps to reinforce the message.



Others – Quick response codes (QR), for example these are attached to temporary works or STATS drawings, risk assessments and safe systems of work to provide quick access to the current documents with the use of an iPhone or iPad and to enable a quick check to ensure the latest documents are being used.



QR codes have also been used to enable cross-referencing and linking to other key specific safety data relevant to the work area and the planned operations. These

can be shown directly to the workforce on site with the appropriate device to help to improve understanding.

Text alerts – Use of text alert system to issue information such as severe weather warnings and reminders of safety events such as risk review / safety leadership meetings.

Design drawings – There is a duty on designers to effectively communicate the residual risks from their design. This can be enhanced by using hazard boxes on drawings to highlight the residual risks to the construction teams.

Monitoring effectiveness

Consider the use of leading key performance indicators to monitor implementation of risk controls, a simple KPI would be the percentage of risk controls identified during the assessment process versus the number actually implemented on site. target KPI's may be agreed by individual project teams.

References

Health and Safety Executive:

Leaflet INDG163 - [Five steps to risk assessment](#)

[Construction \(Design and Management\) Regulations 2007](#)

[Management of Health and Safety at Work Regulations 1999](#)

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