

# CONSTRUCTION SPILL PREVENTION MATTERS

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The hands-on guide which brings together specialists at managerial and site level within UK construction businesses, to discuss the challenges faced in preventing spills, environmental hazards and the implications of such issues occurring.

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As a membership organisation, the Federation is clearly focused to bring benefits to its members, something which its core values and mission statement reflect. Its core values – influential, knowledgeable, beneficial and supportive – drive the BSIF's everyday aims, to support and represent suppliers of safety products and services across all aspects of safety legislation, standards making and major occupational safety issues. Its mission statement – to continue to improve occupational safety, protect and develop the safety and environment protection markets and generate benefits for its members – will continue to drive the Federation over the next years. The BSIF will carry on working with its members and other relevant bodies to help ensure the industry is 'working together in safety'.

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## SPECIAL GUEST INTERVIEW

# Environment Agency's outline on guidelines, support and future actions to encourage environmental management within the UK construction sector

### Interviewer



**Noel Hillmann**  
*Managing Director and  
Head of Publishing,  
Clear Path Analysis*

### Interviewer



**Rt. Hon. Lord Smith  
of Finsbury**  
*Chairman,  
Environment Agency*

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**Noel Hillmann: What is the value of sustainable growth in the construction and demolition sector? Do firms take their corporate responsibility seriously?**

**Rt. Hon. Lord Smith of Finsbury:** Sustainable growth is an absolutely essential ingredient for national and indeed international economic recovery. The construction sector is a major player in our national economy. As an industry it delivered around £69 billion of gross value added to the U.K economy in 2010, employing around 2.5 million workers and there are around half a million construction sites at any one time within the U.K. We are therefore talking about a major economic component of our national life. Of course if we are going to get our economy and country off its knees, getting good growth going across the economy is an absolutely essential requirement.

My view has always been that this growth needs to be as sustainable as possible because there is not a false clash between being green and growing. We can and must have both together. Having growth created in the right way will ultimately be best for all of us and will enable that growth to be sustained rather than just becoming a flash in the pan.

Sustainable growth is absolutely possible with construction and demolition alongside it. Ensuring that construction work happens in the right way is something that is very important. Of course there

are major potential impacts from construction work with close to 77 million tonnes of waste generated in England in 2010 and 1 million tonnes of hazardous waste as part of that. The potential for negative incidents to occur is considerable and making sure that everyone is clear about how best to minimise the impact of construction and its waste on the surrounding environment is what this joint work between ourselves and the construction industry is all about.

**Noel: The UK construction industry, particularly small to medium enterprises, are under tremendous business pressure in this current difficult economic climate. For those concerned with short to long term survival of their business, not just profitability but managing day to day business such as securing contracts, staff issues, securing material at the best cost and so forth, why should they be concerned with an issue such as spill prevention. What is the end benefit for them?**

**Lord Smith:** The first benefit would be that they are carrying out their business properly and well along with not causing damage and pollution to the surrounding environment. Also, very often by conducting business properly you reduce your costs. For example, if you end up sending less material to landfill sites then you will pay less for disposing of it, less on the land fill tax plus you will save the project money.

A good example where this is happening already would be the

London Gateway Port, where we are working with the developers to support the reuse of waste materials which saves them the cost of buying in new materials, saves them money in disposing of old materials and it becomes a win-win situation all around. If you look at what happened with the Olympic Park development in London where about 2 million tonnes of contaminated soil was washed on site and reused on site, that resulted in huge amounts in transport costs being saved. It also resulted in not needing to buy in fresh soil and in disposal costs. Doing tasks more efficiently, creating less waste, thinking about what you are doing with your waste can be of major economic benefit to a project.

**Noel: The larger construction groups and main UK building contractors have the resources and therefore capabilities to employ well trained, dedicated environmental management teams who implement the initiatives you talk of. For those in Small to Medium Enterprises ("SMEs") who are short of this luxury, what type of support does the Environmental Agency offer for those wishing to improve their environmental and spill management policies? How is this support evolving?**

**Lord Smith:** One of the issues that I feel is already happening is that many of the major construction companies are improving their performance, doing better, and thinking seriously about these environmental and spill management issues.

For the many thousands of smaller scale contractors working across the industry two elements need to happen; the first is that the good practice by larger companies can and should filter through into good practice by smaller companies. Very often the smaller companies will frequently act as sub contractors for the major companies and that can be a very good link to insist on good behaviour.

The second element that needs to happen is to have very clear, effective guidance and advice which must be widely available to companies both big and small. That is why I have been particularly pleased to see the Pollution Prevention Guidance 6 ("PPG6") document. That document was created specifically for the construction industry.

Our first attempt at providing guidance to the construction industry on spill prevention and waste management wasn't quite what was really needed. This is something that everyone told us in no uncertain terms. We then went back to the drawing board, sat down with the Construction Industry Research and Information Association ("CIRIA") and together we produced the new PPG6 guidance. It is much more proactive, interactive and case based whilst also providing very good examples. It seems to have been widely welcomed across the industry. This type of product which provides really good, effective, easy to use and very clear guidance to encourage people to do the right thing is one of the ways in which we can get the message out.

**Noel:** You mention that the first document you produced didn't quite hit the point and that the follow up documentation was far more inclusive of the required solutions for the issue. How did you go about engaging specifically with SMEs to reach that point and in the future, how can SMEs engage with the Environment Agency to ensure that their concerns are continually being addressed?

**Lord Smith:** We do listen to all of the feedback that we receive, wherever it may come from. Some of it will be from large companies whilst other comments may be from smaller firms. Inevitably discussion with the huge variety of SMEs is always going to be more difficult than with some of the major contractors but we do need to include them in our work.

We have also just had the launch of the Site Environmental Awareness Training Scheme. That has been launched by the Construction Industry Training Board to provide a common training course for construction workers. This is something that I feel will be of particular benefit to workers from SMEs as well as to people from the larger companies.

We sit down on a regular basis at a very high level with our Chief Executive, Director of Environment and Business and the UK contractors group to talk through any issues that are coming up within the industry. I would hope that the U.K contractors group would also be feeding through not just the views of the major firms but also the experience and views of the many SMEs as well.

**Noel:** The issue of consistency of advice and strength of enforcement action depending on who you are, was one concern raised by participants in the report roundtable\*. Does the Environment Agency have a bias towards enforcement activity being focused on the national and multinational building companies as a way of raising standards across the entire industry through their motivation to ensure sub contractors are compliant?

**Lord Smith:** There is certainly no bias or intention of bias in the way in which we approach these issues. Yes, large companies have a leadership role in showing the way for everyone else but that doesn't mean that we simply concentrate on taking them to task and leave everyone else to their own devices. What is important for

us is the environmental impact in any individual case. Every spill or waste case differs from each other, so you are never going to have exactly the same answer because the incidents are all different. What you must have is a consistency of approach and a desire to get the environmental outcome that is going to be best for the environment. This is what we would try to achieve in all cases.

**Noel:** What further work do you feel can be undertaken between the Environment Agency and industry to further improve environmental management standards?

**Lord Smith:** We need to maintain our joint work with CIRIA, the UK Contractors Group ("UKCG") and do as much as we can with them. We are also working with the British Safety Industry Federation ("BSIF") and are providing advice to the National Federation of Demolition Contractors ("NFDC") along with other trade bodies. We simply need to continue with the discussions, the advice and guidance along with the encouragement that we are already trying to give.

As a final thought, the general impression I get from reviewing the current situation in respect to environmental and spill management is that there has been quite a lot of progress. Important aspects in respect to environmental management are getting better with companies up and down the country, paying more attention to spillage control and waste management requirements. Increasingly, I view companies as having a concern for the environmental impact of what they are doing and we simply need to do more of the same and continue to get better at doing it.

*\* The report roundtables being referred to are those on the following pages of this Construction Spill Prevention Matters report. This interview took place after they had been held.*

# Identifying common spill threats and the cost of remedy



**Dr. Paul Toyne**  
Global Sustainability  
Director, WSP & Chair,  
Constructing Excellence's  
Sustainability Forum

## Setting the Scene

The construction industry is a major source of pollution. Individual builders, small/medium enterprises and larger companies are all responsible for the impact they have on the environment. Every year, the Environment Agency responds to as many as 350 pollution incidents caused by construction. Furthermore, construction, demolition and excavation waste is found in illegal waste sites; an 'invisible' source of environmental pollution from the construction sector.

Whilst significant advances have been made across the industry with programmes such as the Considerate Constructors Scheme ([www.ccscheme.org.uk](http://www.ccscheme.org.uk)) and CEEQUAL ([www.ceequal.com](http://www.ceequal.com)), there remains a clear need for the construction sector to improve and reduce the pollution it causes.

This white paper will explore the common spill threats and the costs, direct and indirect, associated with pollution spills.

## What are the Issues?

Pollution spills on construction sites can arise from a number of sources and from a number of activities (see Figure 1).

A lack of knowledge and experience associated with water management and an absence of suitable on-site practices are the biggest causes of pollution spills with releases of oil and silt to watercourses the most common.

However, adjacency of construction to rivers does not always imply a greater risk of river pollution; any pollutants from construction sites can end up in a river, even miles from site, through drains and service/utility ducts acting as unseen pathways.

Many construction projects take place on brownfield sites where soil and groundwater are contaminated from historic land use, relict structures can hold contamination

Figure 1: Sources, propagation and impacts of pollution spills



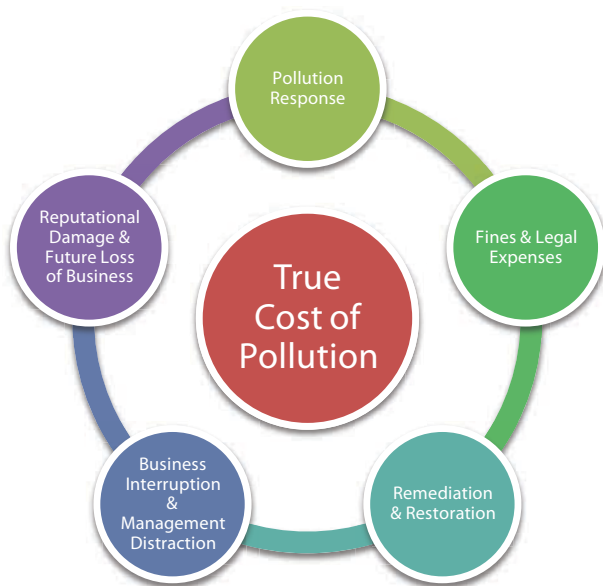
and drainage networks can be complex and compromised leading to increased risks of pollution releases and impacts to the environment.

**Prevention is better than cure**

Most pollution incidents are avoidable. Careful planning can reduce the risk of pollution. Most of the measures needed to prevent pollution cost very little, especially if they are included at the planning stage. In contrast, the costs of cleaning up a pollution incident can be very high.

There is a raft of guidance available outlining what we are required to do by law together with best practice measures to reduce the risk of pollution incidents. As a starting point, the recently updated Environment Agency document “Working at Demolition and Construction Sites: PPG Pollution Prevention Guidelines, 2012” (<http://www.environment-agency.gov.uk/business/sectors/136250.asp>) provides a helpful and useable guide and signposts routes to further guidance.

**Pollution – the remedies and the costs**



Responsibility for preventing pollution rests with those in control of the site. If site activities cause pollution you, your company, your subcontractors and your client could end up in court facing a significant fine, court costs and potentially prison. You may also have to pay clean up and restoration costs, under the ‘Polluter pays’ principle. Where prosecution is not pursued, other legal action may include formal warnings and enforcement notices.

Spill response and management is a well-established industry and will include recovery of contaminating liquids from drains, watercourses etc., using pumps, tankers, absorbent media such as hay bales, oil booms and spill granules followed in

“...there remains a clear need for the construction sector to improve and reduce the pollution it causes.”

some instances by surfactants and dispersants to assist in the breakdown of residual contamination on surface waters. Each component is relatively inexpensive, but costs can accumulate quickly in the stressful and high pressure environment of spill response.

Once the acute spill has been addressed the wider chronic damages caused to the environment by the spill must be repaired; this can be wide ranging from restocking fish supplies to habitat restoration, compensation (where restoration cannot be achieved) and remediation of impacted soils and groundwater. All of these will require surveys and assessments to define an appropriate level of restoration.

The Environment Agency state that a fuel release to a watercourse will typically result in fines and costs averaging £30,000. However, the overall cost and impact to a business following a pollution incident can be much greater. Being prosecuted may affect your ability to win future work and the management of the pollution incident, the subsequent remediation works, legal proceedings and reputational issues can cause significant distraction for key business personnel.

A summary of potential remediation approaches and indicative costs is outlined below:

Issue	Remedy	Costs
<b>Pollution Response</b>	Spill kits	<£1,000 (excludes disposal)
	Booms	<£1,000-£10,000+
	Tankers	£1,000->£10,000+
<b>Remediation &amp; Restoration</b>	Surveys/Technical Support	£500-£50,000+
	Soil Remediation	£50/m <sup>3</sup> -£250/m <sup>3</sup> (excludes incineration)
	Groundwater Remediation	£30,000-£500,000+
	Habitat Restoration	£1,000-£500,000+



Issue	Remedy	Costs
	Restocking Fish Reserves	£££'s
	Compensation (where habitat can- not be restored)	£££'s
<b>Fines &amp; Legal Costs</b>	None	£500-£250,000+
<b>Business Interruption &amp; Management Distraction</b>	?	££££££
<b>Reputational Damage</b>	?	As above

(data presented are from WSP)

Each issue can compound the overall impact of the pollution incident. For instance, soil or groundwater remediation to address impacts from a spillage can result in unplanned ground disturbance, delays and potential suspension of the construction works, generating the risk of further financial penalties for delays and late completion of the project.

As a final note it is worth considering that pollution incidents and spills that go unreported or ignored have the ability to become a liability of the future. In a recent case brought by the Environment Agency, the Secretary of State ruled that the developer was jointly responsible for a proportion of a groundwater pollution liability affecting 20km of a chalk aquifer. It concluded that construction and redevelopment of the site had made a historic pollution problem worse.

### Closing

It is clear through schemes such as CEEQUAL and Considerate Constructors Scheme that the construction industry is making significant progress. However, more effort is required and business should be doing all it can to avoid future pollution. By following pollution prevention guidelines, the construction industry can play its part in helping to safeguard the natural environment.

“Responsibility for preventing pollution rests with those in control of the site. If site activities cause pollution you, your company, your subcontractors and your client could end up in court facing a significant fine, court costs and potentially prison.”

“Once the acute spill has been addressed the wider chronic damages caused to the environment by the spill must be repaired...”

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## ROUNDTABLE

# Is there such thing as a 'low level hazard' or should, and can, all hazards be treated as 'high priority'

### Moderator



**Mike Claridge**  
Vice Chairman,  
Spill Containment  
Group, British Safety  
Industry Federation

### Panellists



**Matt Wisdom**  
Environmental Manager,  
Thomas Vale



**Amy Shuffleton**  
Group Environmental  
Manager, Costain



**Richard Smith**  
Group Environmental  
Manager, Vinci  
Construction UK



**David Lummis**  
Chief Executive  
Officer, British Safety  
Industry Federation

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**Mike Claridge:** Do you believe that there is a difference between low and high level hazards and how are the two categorised?

**Matt Wisdom:** Yes there is a difference: low level risk is where there is no immediate risk to the environment or a person, high level is any risk to a person or to the environment from a spillage. If there is risk of a substance entering a drain or watercourse for example, or if a hazardous substance has the potential to add ill effects to humans or animals, then we would classify these as high level risks.

**Amy Shuffleton:** We categorise environmental pollution incidents within our business and define them as; minor, significant or major. Major are the risk or the actual cause of permanent environmental damage, and this would fall in line with the environmental damage regulations. Minor or significant means an event has occurred and action needs to be taken to prevent permanent damage.

**Mike:** Matt mentioned damage to people and animals as well as environment but Amy, animals is not included in your categorisation?

**Amy:** Environmental damage as I define it would be to; land,

air, water, ecology as well as potential human health.

**Mike:** What are your thoughts, Richard?

**Richard Smith:** We distinguish between them and use a level 1 to 4 system to identify the damage that has occurred as a result. A level 4 would be a scenario with low potential damage to the environment where something could have happened but it didn't. A level 3 would result in limited or no damage to the environment with a low potential of enforcement action. An example of a level 3 would be a fuel or chemical spillage away from water courses, protected habitats or drainage systems. Level 2 would be an incident resulting in significant harm or damage to the environment with a moderate likelihood of enforcement action or media attention. This incident may also receive a statutory notice from regulatory body. Level 1 would be catastrophic harm or damage to the environment with a high likelihood of enforcement action and/or significant media attention.

**Matt:** Our near misses are normally captured through auditing rather than through instant response.

**Mike:** Do you have any thoughts on this, David?

**David Lummis:** I am wondering if it would be sensible for a formal categorisation system to be available so that all elements can be measured in the same way. This would mean better control and understanding over each situation.

**Amy:** I sit on the U.K Contractors Group Environmental Forum and we are keen for everyone to measure apples against apples! Health and safety have clear reportable accidents, whereas it is very difficult from an environmental point of view.

**David:** Do we all believe that a collective measurement system across the industry should be considered?

**Richard:** I definitely agree and have seen examples of this working within large infrastructure projects like Cross Rail. They can measure performance across all of their contracts, with various contractors, by getting all of them to report using the same system. This has been a good case study for how a comparable system of performance analysis works at the moment and useful in working out how to develop something similar.

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Is there such thing as a 'low level hazard' or should, and can, all hazards be treated as 'high priority'

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**Amy:** From a pragmatic approach we need to make sure that, like with major injuries to personnel, or lost time which we must report within 3 or 7 days the same scale is applied to environmental reporting. Many infrastructure systems are set up in big projects to reporting everything, so the mindset is already established. Most Contractors are great at managing themselves with most reporting only certain levels of information rather than bombarding everyone with everything.

**Matt:** I agree with the idea of standard reporting. It provides clarity particularly to supply chain and smaller main contractors like ourselves. We report when we see fit and some kind of standardised reporting would be beneficial.

**Mike:** What are the differences in planning and response procedures given your views on categorising low and high level hazards?

**Matt:** It is a risk assessment approach to any activity that we would undertake as a company or through a supply chain. Identifying and managing risk is key along with ensuring that appropriate information is within the main contractor's method statements.

In terms of response procedures, we have an early doors risk assessment of a project which is communicated into an environmental emergency plan, which details clearly to our site or project manager their response in dealing with an incident.

We do have difference in terms of low and high level risk. If it is a low level risk which is not going to cause any major incidents then it is dealt with at site level and then reported back through a paper work system. High level risks start with an immediate telephone call and then it is responded to by the environmental management team.

**Mike:** Does planning on your risk assessment differ depending on whether it is a high or low level?

**Matt:** A good risk assessment process will identify the risk and then the procedures to minimise or eliminate the risk. The identification of the risk determines what response comes out of that, and if there is no alternative, then we would manage that under best practical environmental options. Identifying the risk and managing at the early stage is key.

**Amy:** The majority of contractors with certified management systems have a similar approach. At the start of any contract we perform an environmental risk register/assessment to understand what the potential environmental risks might be. We implement control measures by a method statement or control plans to minimise those risks and then we work to those plans via our day-to-day operations. If an accident or incident does occur then we have the process of the levels 1-4 as discussed earlier.

**Richard:** We have a risk control register at tender stage. The risk register is populated by the bid team so they are already thinking ahead as to what the risks may be and how to control them. Upon contract award, this is progressed through to the project team who then come up with their risk control schedule. They then populate task control sheets which are specifically for briefing the work force on the risks and control measures should something go wrong. There is an emergency response procedure which defines the methodology for dealing with those individual incidents and the incident is then reported to us at group level. Level 1 and 2 would be investigated, level 3 would be approved and sometimes further support may be given, but generally at level 3 it shouldn't be needed. Close calls

**“We distinguish between them and use a level 1 to 4 system to identify the damage that has occurred as a result.”**

would be analysed for trends – you can see this is a very similar process.

**Mike:** The most important thing would be getting the risk assessment right at the start, then working through the various procedures.

**Amy:** Yes and having those control plans. Site specific documents are the pivotal piece of information to prevent the accidents happening in the first place.

**David:** Appropriate levels of protection need to be put in place, for example the threat of fatalities is much higher than if you were just going to prick your finger. The appropriateness of the response needs to be matched to the hazard that you are facing and one needs to throw in much more resource to a situation that will have long term serious harm than you would do where it is a very short term and easily cleaned up problem.

**Amy:** This is exactly how we manage it from a risk point of view. We have a 5 by 5 matrix and we determine the level of likelihood and severity in planning, exactly as you do for health and safety.

**David:** If you look at the nuclear industry, their risk assessments are so much more detailed. There are many measures to prevent rather than to overcome which is vital.

**Richard:** The risk control process has to be proportionate. We are moving away from receiving generic information from the supply chain about how they are going to manage risk - we

## “A good risk assessment process will identify the risk and then the procedures to minimise or eliminate the risk.”

now want to know specific details that are unique to that project. We don't want to be issued with method statements and risk assessments that tell us nothing about how they approach whole work packages, we want to know how they are going to approach individual tasks to prevent things from happening. This is what we are looking at currently and are rolling out to our businesses.

**Mike:** How do you communicate risk assessments to staff and sub contractors working on a site?

**Matt:** Identification of the risks and hazards at an early stage is crucial. As part of the tender process for a contract we outline the hazards and risks sub contractors should expect to face. We often receive information from our client which contains ground investigation reports. This information can flag up hazards which we will communicate on to the supply chain. Upon contract award our bid team communicates to the site management team key risks and environmental issues. At tender stage our estimators will begin the environmental risk management process with input from the environmental team if required. This is passed on and completed by the construction team. As we appoint supply chain members, documentation is communicated of environmental risks and hazards and who should take responsibility for them. On site, inductions and training are crucial in ensuring that a specific hazard has been identified on site. Communication through the process is critical right from the beginning

straight to the people who are doing the work on site.

**Amy:** This is how we work as well. It is a case of making everyone aware of the identified risks at tender and bid stage. We need to make people aware of what is, and is

not, important and you must give the right amount of time to the higher risk elements and then there would be communication to subcontractors via toolbox talks out on site and making sure that if something does go wrong that they know how to manage it.

**Mike:** Does the expression “toolbox talks” refer to the people who are out on site together with a site manager or supervisor who gives them a one to one briefing on the risks associated with their particular job?

**Amy:** It is literally a one page briefing note. In the construction industry you already have a set of generic toolbox talks which the U.K.C.G and previously the Construction Federation Environmental Forum developed. There is a set of 20+ toolbox talks covering spills, waste, water, noise, dust etc. These are included in G700 (new version) of that document which now includes an environmental section. These are very clear, dos and don'ts, and what to do if there are any problems that can be pinned to a wall with ticks, crosses and some pictures.

**Richard:** It is important to communicate at the sharp end, as you called it and to get information to the people who are actually doing the work on site so they understand the procedures in place and how to practically put them into practice.

Initially, you need to identify the potential risks of what they are doing. You then need to discuss the control measures to reduce that risk. If one of

those control measures fails, how do they manage that situation? We are concentrating on the communication of that information to the workforce through the task control sheets. The toolbox talks are very handy but they need to be appropriately directed - it shouldn't just be for the sake of it which sometimes happens.

**Mike:** Do they become like the safety talks given at the beginning of an aeroplane flight?

**Richard:** Yes. People become desensitised to these talks and some of the guys shut off. We try to make them interesting and relate to the work that is being carried out on the project. Toolbox talks are quite generic but they still have their place.

**Mike:** Should toolbox talks be tailored to the work on each individual site?

**Amy:** Yes. There will always be issues which will be the same on every job but there may be sensitive receptors which need to be site specific. It is about having someone who is experienced and knowledgeable to deliver the information.

**David:** How do you go about policing good practice on site? I have been on site where contractors are really not interested in good practice but in simply getting the job done.

**Amy:** We run a certified management system. We inform people on what we are going to do and we make sure to check that they are doing it through compliance checks, audits and general engagement.

**Matt:** Part of our project management teams' responsibility is to make sure that everyone is operating within their required procedures. If that is not happening then we have laid out guidelines on stopping work or if need be, removing personnel from site.

**Richard:** We are good at making sure that our staff are doing things as per



**“If one of those control measures fails, how do they manage that situation? We are concentrating on the communication of that information to the workforce through the task control sheets.”**

our defined procedures etc. With the supply chain there is the risk that subcontractors can tell us that they will do everything required, but when it comes to doing the work there can be slippage and deviation away from our requirements. It is important to capture and address it with the supply chain and make sure that actions are put in place to deal with it. This doesn't always happen and this is where we get a loss in quality and potentially actions go wrong.

**Mike: It must be easy enough to see if somebody is on site wearing their hard hat but not so easy to see whether they are doing correct procedures on A, B or C?**

**Richard:** Potentially yes.

**David:** The 'plan, do, check and act' was what I was hoping we would get to. I have been on to sites where 'plan and do' come very highly, 'check' is now and again and 'act' is almost never. Essentially if you follow through all four you will get a completely rounded process.

**Mike: Are any changes needed to current strategies to deal with low versus high level hazards? Are there any obstacles in place for those changes?**

**Matt:** A standardised industry approach would be key. I wouldn't imagine there to be many hurdles

as most major contractors are working to a similar standard in terms of responding to incidents.

**Amy:** I agree - we have many reputable, certified contractors that have systems in place for reporting incidents and accidents who hopefully already meet a lot of these requirements.

The pragmatic approach to how we manage external reporting would probably be a good solution rather than having to report everything. The education process may involve roughly 60% of the construction industry, because they are smaller to medium sized enterprises that would need a certain amount of education in incident management and reporting. Whilst they are all probably registered within our supply chain, as major contractors there would likely still be an educational item that would need to be carried out by the regulators to ensure that everyone was compliant and reported as required.

**Richard:** We are currently changing our risk management process at the company level. The way that we look at identifying control measures for low and high risks are changing. I mentioned earlier that we are moving away from reviewing method statements and risk assessments to asking for very specific information from the supply chain and from our own staff at project level. We see this as a positive step because we are trying to shift levels of awareness from generic issues.

The challenge I foresee is that people

don't like change. It will be interesting for us over the next twelve months to see how the supply chains will respond to these changes and what the quality of information is like. The end result will hopefully be better risk identification on our projects and better thought around control measures and as a result reduced incidents and accidents.

**Mike: Do you feel that there could be a danger, at the lower subcontractor end, that low level risk gets forgotten about?**

**David:** One of my concerns is the SMEs who are working on large extensions. I am not sure that they have a strong enough perception of this whole concept. We have made this fairly difficult and what might be useful for them is to have some very simple to follow instructions and things to do in order to avoid spills and what to do if there is a spill. We have all seen sites where there is a spill of diesel and all that occurs is the soil is dug over -as an industry we need to get that thought process changed.

**Matt:** I agree but there is probably a degree of responding to the level of risk. A bit of diesel on soil is not great but if you are talking about major infrastructure projects where there is the potential to cause irreparable harm to the environment it is entirely different. It is a question of response and what level of risk you want to go for and what level of risk you want to manage.

**“...what might be useful for them is to have some very simple to follow instructions and things to do in order to avoid spills and what to do if there is a spill.”**

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Is there such thing as a 'low level hazard' or should, and can, all hazards be treated as 'high priority'

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**Amy:** We can't be too dictatorial about this. We have to understand that people will have different ways of managing risk. As long as the emphasis is on managing the risk in the first place that is where the emphasis and responsibility should lie on the client, designer or pre construction as well as the major contractors and their associated sub contractors. I agree that there are different levels of compliance depending on what site you go to but once the guidance and anything mandatory comes out it is up to the contractor to police that.

**Mike:** It is perhaps true that the smaller builder will have a different attitude depending on where they are working. We want people working together and not looking for a different agenda.

**Amy:** When the RIDDOR Regulations came out many years ago they pulled people into line because that is what they had to do i.e. gave a clear framework for the reporting of safety and health related accidents and incident. They pulled people into line in many different ways but to the same end results. I imagine this potential proposal would be quite similar getting everyone in line with regards to environmental incident reporting and comparing like with like.

**Mike:** It appears the larger contractor is doing a good job. They know what they are doing and successfully put it into operation. How we police the smaller contractor is the main question as the wielding a big stick attitude doesn't tend to work

**Richard:** I would be careful with the term policing. As a major contractor you are right that we do have defined procedures and a good way of doing tasks which generally work. The people who work for us through the supply chain can be miles apart from where we are and they just don't have the same attitudes - it simply isn't on their radar. They will be up skilled by working on our projects

but where they go away and work on their own projects at a much lower level, right down to house extensions, there just aren't the same issues. Even if there was industry guidance on how to deal with a spill in someone's back garden, I'm not convinced that many would read or use it. It is about proportionately. The issues we face on large projects have the potential for large scale environmental impacts but a small scale petrol spill from a saw won't have a massive impact. We need to ensure that what we are asking the supply chain to do is reasonable and fair based on their resources.

**Mike:** On that note we can finish. Thank-you to the panel for your participation and sharing of ideas.

**“As long as the emphasis is on managing the risk in the first place that is where the emphasis and responsibility should lie on the client, designer or pre construction as well as the major contractors and their associated sub contractors.”**

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## INTERVIEW

# Contractor or Developer: whose responsibility is spill prevention and how the hazard avoidance tasks should be shared?

### Interviewer



**Noel Hillmann**  
*Managing Director &  
Head of Publishing,  
Clear Path Analysis*

### Interviewee



**Jon May**  
*Head of Environmental  
Operations - EMEA,  
Lend Lease*

**Noel Hillmann:** Thank-you for joining me Jon for this chat. I'd like to start by asking, how is the task of environmental protection, specifically that of avoiding spillages of hazardous substances, shared between Lend Lease as the main developer and those you contract?

**Jon May:** The presumption is that everyone has a responsibility on site to ensure that their work does not cause harm. We expect all of our sub contractor staff to understand how their work impacts the environment and what controls are in place to minimise negative effects. Our procedures; 'Environmental Standard Operating Procedures' and 'Global Minimum Requirements' coupled with the 'Project Environmental Aspects and Impacts Register' and the 'Project Environmental Plan' work together to define our requirements for conducting work on our projects. We inform all of our contractors at the tender stage of these requirements and check through audit that they are aware and applying the procedures on the project.

The procedures we enforce could be for material specification, spill prevention, spill response and incident response. In the event of a spill it is the contractor who is responsible for containing the spill and ensuring they take all precautionary measures before contacting the Lend Lease project manager who then reports the incident through our incident reporting systems. We place significant emphasis on education and training our partners and suppliers so that

everyone is aware of both our minimum standards and best practice.

We are a partner in an industry training initiative called 'The Sustainability Supply Chain School,' along with 6 other contractors. We collaborated with our partners to produce and deliver a whole host of training, events and workshops to deliver a common set of expectations to our supply chains and bring them up to a common standard.

We have set out a high bar in terms of standards and procedures to follow and we are there to help every step of the way to ensure that suppliers can meet them.

**Noel:** What specific evidence do those who are tendering for a project need to provide? How deep does the audit go and what exactly are you looking for?

**Jon:** We developed a supply chain accreditation scheme with Achillies called 'Building Confidence', which applies five levels of audits - five being the highest and most in depth. A level 5 audit is essentially a '2 day' audit of all of their systems, processes and procedures. All contractors undertaking works for Lend Lease of significant risk or value will be subject to either a level 4 or 5 audit under Building Confidence This process will occur before we enter into a contract and will establish whether we feel they are competent to meet the minimum requirements of our systems. Once on a project my team will undertake ISO14001 audits of

the application of the environmental management system to that project. This audit will also capture some of the key sub contractors; however it is an audit of the project rather than the sub contractors. We will bring the supervisors from the key sub contractors and ask them how the environmental management system is performing on that project. If there are any issues associated with provision of spill kits, appropriate storage areas for fuel and chemicals etc. then they can bring this up at audit and we address this with the Lend Lease project manager, rather than directly with the sub contractors.

**Noel:** How much education on a one-to-one basis would you expect a contractor needs?

**Jon:** They should be cognisant of everything that we have asked them to do pre-tender. As with all contracts, they receive a lot of information at the tender stage which we receive from our clients.

The Global Minimum Requirements, Environmental Standard Operating Procedures and Contract Requirements are items they should be aware of and I would then expect them to come to the pre-start meeting with any concerns.

**Noel:** Are your standards similar to those of your peers so those in the supply chain face unity of process across the main UK contractors or do your considerations differ? Do contractors face different levels of

**“We expect all of our sub contractor staff to understand how their work impacts the environment and what controls are in place to minimise negative effects.”**

**scrutiny depending on the project that they are dealing with?**

**Jon:** We try to be consistent as an industry and as major contractors we do meet very regularly with our peers. We are members of the UK Contractors Group, Construction Confederation Environmental Forum, U.K Green Building Council and Green Construction Board. The Environment Agency (“EA”) is a member of most of those forums as well. There are many procedures and training schemes we have developed as an industry - the supply chain school being one example. There are also some standard environmental training courses, such as the Site Environmental Awareness Training scheme (SEATs), which are being developed, much of what we do is prescribed by the EA in the form of technical guidance notes.

Some of the more progressive contractors can meet a lot of the requirements as part of their standard practice now so we are getting much better. Fuel and chemical storage is always the issue out on site because when sites get very busy, things can get moved around. Maintaining procedures can become a bit of a challenge and therefore a lot of our focus is on ensuring that this risk is not introduced.

**Noel: What challenges have you faced previously in hazard avoidance task sharing with a contractor and**

**how could these situations have been avoided?**

**Jon:** The main challenge is making sure everyone is aware of their responsibilities and how they are going to meet them. The risk is where two or three parties have been charged with a task and it has not been made

explicit who is carrying out that task or is buried deep within paper work! As a result, we are very clear at the Invitation to Tender (I.T.T) stage of what we expect from them. The Global Minimum Requirements and Environmental Standard Operating Procedures apply to all contractors, so essentially they should be aware of that when they start a project. If they are undertaking any activity that could pose an environmental risk (such as bringing fuel on to site) they know what standards are to be applied.

The other issue that arises is where they might be operating outside their competency. We work to ensure that this isn't the case and use the ‘Building Confidence’ system to ensure that issues are picked up before we enter into contract.

Another challenge is where contractors are used to operating different procedures to the ones we have in place. We work hard to ensure they understand our procedures and will discuss these with them at the first available opportunity. If they are not familiar with them then we will be able to train them and provide guidance.

**Noel: It seems as though most of the major challenges and hurdles are based around communication?**

**Jon:** Yes. A challenge for all developers is that there is a huge amount of procedures we need to follow on a contract. If you are a small to medium sized enterprise it may be a little onerous getting your head around all of those procedures if you haven't immediately had experience of them before. We are understanding of this and have tried to reduce paperwork as much as possible but there are certain issues that we need to lay out in black and white.

**Noel: Is there a minimum size of organisation you will work with who already have these procedures and understandings in place?**

**Jon:** It is a challenge for smaller firms but I am not aware of any instances where we have had to exclude smaller businesses because of their inability to apply our procedures. There are instances where we have had to exclude smaller companies because the size of the order would make up too much of their turnover and it would introduce a financial risk to the project. However it should be possible for every contractor to understand and apply our environmental procedures.

Some contractors are effectively one-man-bands and if they can apply it then anybody should be able to. It is not onerous in terms of the work that they are undertaking and makes

**“There are many procedures and training schemes we have developed as an industry - the supply chain school being one example.”**



good business sense to apply strict environmental controls to your work. The challenge comes in making sure that they get their head around the procedures at tender stage because we don't want to face any surprises when we get to the production stage.

**Noel: How do you see your guidelines evolving in the next year to five years?**

**Jon:** Legislation will influence how they evolve. Some principles around responsible sourcing, BS6001 and the EU Timber Regulations are two examples that will create developments in our environmental guidelines. This is where the industry is getting more aggressive with regards to sourcing the materials for our jobs. I would expect us to push the bar higher in this area every year. However issues around spill protection have been relatively standard in terms of the minimum requirements for a number of years. I don't see them changing much in the future because the procedures that we have in place are robust, tried and tested and although the kit required to comply with them does become more advanced, the actual procedure shouldn't change significantly. If we identify best practice on site then we may well take that and make it standard practice. Similarly if we are sitting on any of the groups that I mentioned before and one of the other parties brings best practice to the table, there is potential to implement that as standard practice across the industry.

**Noel: What further changes are you looking to make to your contractor-developer relationships when it comes to environmental and spill management policies?**

**Jon:** There is always continual change within our industry but we would continue to try and promote engagement on these procedures. If a contractor has a better approach to managing any of these operational risks then I would encourage them to share that best practice. We have

sustainability performance reports that reward projects who report best practice. For the supply chain school, if they undertake a self assessment and feel that they are advanced in a particular area we will encourage them to lecture at a workshop on that particular topic. We want this to be a dialogue rather than a dictation.

**Noel: Do you prioritise certain organisations because they have a very strong environmental protection record or have shown excellence in sustainability matters?**

**Jon:** It certainly is one of the criteria that we apply during the Building Confidence audit. The nature of the work would dictate whether that is a more important factor than financial, health and safety or any of the others. Ideally we would seek to apply a blend of all of them and achieve best value across all of the categories however that is not always the case. It is fair to say that there is a minimum standard that we would accept and if they cannot meet this on any of those categories then they won't get the job. If they can meet the minimum criteria and do well on sustainability then that would place them at an advantage.

“...have tried to reduce paperwork as much as possible but there are certain issues that we need to lay out in black and white.”

“Some contractors are effectively one-man-bands and if they can apply it then anybody should be able to.”

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## ROUNDTABLE

# Developing a spill training plan: knowing the basics to put in place today

### Moderator



**Noel Hillmann**  
*Managing Director and  
Head of Publishing,  
Clear Path Analysis*

### Panellists



**Paul Haxell**  
*Group Health Safety &  
Environment Director,  
Bovis Homes*



**Hattie Emerson**  
*Environmental  
Manager, Mace Group*



**Michael Jenkins**  
*Technical Advisor,  
Environment Agency*

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#### **Noel Hillmann: Have you faced spill situations that shaped the plans you have in place today?**

**Paul Haxell:** Absolutely yes. We had someone use a forklift truck to move a 250 gallon bowser and then drop it! We have also had issues with silt contamination in the water course. These incidents have both amended our thought processes in preventing repetition.

**Hattie Emerson:** Unfortunately we too have experienced incidents on projects. One that springs to mind is when a JCB Telehandler was being repaired, the hydraulic cable was damaged and caused hydraulic fluid to be discharged uncontrollably. Review of the circumstances surrounding the incident helped us tighten up our pollution prevention plans.

#### **Noel: When those incidents happened do you successfully identify why they happened and then changed your policy immediately?**

**Paul:** It comes down to knowledge, understanding and application. The person who picked up bowser, trundled down the road, clipped a bit of uneven ground dropping the tank and discharging its contents. People had awareness and did what they

thought was right. They dashed off, plugged up the end of the drainage run and thought that they had solved the problem. The problem was they used cement (a very alkaline problem material when it enters a watercourse) which is probably as harmful as if the diesel had discharged. It is this kind of situation where we need those on site to know what the result of such incidents could be in order to respond and deal with the problem. There is now better signage ensuring that there is provision of adequate material. With the silt issue, we fell into the trap of thinking that we had consents for discharge but as all of these consents are for completed housing development they address a very different scenario from that which applies during the construction period. A lesson that I'm sure many have learnt is that silt is a pollutant in terms of an excess over and above the natural concentration.

**Hattie:** Our review showed that the existing spill response procedure was followed, which we were pleased about, however planning and preparation should have been better. When we investigated the incident, although the spill response team was contacted who attended the scene immediately, the spill kit was not in close proximity, causing

a delay in the clean up. If there had been a drip tray at the scene and a spill kit on the telehandler then the spill would have been much better contained. These elements of our procedure were clarified and communication methods revisited.

#### **Noel: What spill prevention training plans do you have in place for new staff now?**

**Paul:** Planning and risk assessment such as; what do you have or are likely to have on your site which has a pollution potential. We see three areas of concern for prevention; storage, handling and its movement. 50% of our focus is on protecting the pathway and the spreading of any spills.

Another issue is mitigation and the protection of aquatic life once the water has become contaminated. This change of emphasis has borne quite a lot of fruit because it is a model that can be applied to all forms of pollution.

The 'doing' is vital, as so many people place the emphasis on legislation requirements rather than the practicalities. It's about converting legislation into practical steps.

**Hattie:** And communicating those practical steps to all relevant people

## “Review of the circumstances surrounding the incident helped us tighten up our pollution prevention plans.”

is vital. We do this at various different levels, through training to our subcontractors' management teams in our Mace Business School, to having clear guidance in the site induction to having regular tool box talks to staff. We also require a site team to have had specific spill response training. This is the basic training required, however every project is different so prevention plans may need to be adapted and tailored for different sites, we this through working closely with our subcontractors and identifying the risks at the earliest stage.

**Noel: What common situations have you witnessed that have shaped how you advise construction companies, Michael?**

**Michael Jenkins:** The positive thing is that we are both singing from the same hymn sheet. Paul mentioned silt which has been a common issue. People on site often could be de-watering excavations and then pump the silt water to a surface water drain on site. They are aware that the nearest water course isn't for a mile or so and assume that it will not be an issue, which is not the case.

Some years ago it was probably thought that issues such as silt weren't that polluting but we know differently nowadays. By completing a spill prevention plan those sources will be identified along with the pathways. Receptors will also be clearly recognised whether they are on site or otherwise. Once you have identified those risks we can mitigate for them (whether that be through

bunding of tanks, painting manholes or ideally eliminating the need for the process to happen altogether). The key issue is to ensure that everybody who works on site, whether they be from the principle contractor or sub contractors, is fully aware of what is within the spill plan, where the equipment is and how to use it – ensuring that the plan isn't simply in someone's office gathering dust.

**Noel: Have you seen a rise in any particular spill scenarios?**

**Michael:** Not really - hopefully this is because of increased compliance rather than a sector that is struggling. At the moment we are seeing a fall in the number of pollutions that are caused by the construction sector which is very positive.

**Noel: The construction sector has certainly seen some economic troubles, have you seen a direct correlation between the fortunes of construction companies and their willingness to invest in appropriate spill prevention equipment?**

**Michael:** That is certainly not something that I have been made aware of. It is an anecdotal comment that since around 2008 we have seen a reduction in the number of pollution incidents that have been attributed to the construction sector.

**Paul:** Spill protection need not be that expensive. People will always be drawn to the glossy catalogue that shows absorbent granular pads and booms etc. There is a place for these but recognition that proper handling and control is going to be preferable to cleaning up is important. You don't need to break the bank to be in control and prevent spills effectively.

**Michael:** Absolutely. By managing the products you are saving costs. If you were to lose a barrel of diesel for example, that is straight off your bottom line at the end of the day.

**Hattie:** And we mustn't forget that in that scenario, there is also the cleanup cost of the process, waste disposal and management time, which is likely to be more significant than the cost of material lost.

**Noel: What do you deem to be the basics of any spill prevention plan?**

**Paul:** Understanding what you've got and its potential to cause harm. It is the risk assessment approach, meaning it is about prevention and making sure the emphasis is on source and prevention rather than protection or mitigation. They are part of the control strategy but in effect are only elements that you need to bring to bear if prevention has been breached in some shape or form. It is about educating your machine drivers to put the nozzle back when they have refuelled, having a drip tray when he is pouring it into the small generator; it is the handling and dealing with the straight forward stuff. Unfortunately we are an industry where people will habitually do what they have always done.

**Hattie:** Paul is right, it is the idea of SOURCE – PATHWAY – RECEPTOR. If you can't remove the potential source of a pollution incident, then you must make sure that the pathway is blocked thoroughly.

**Noel: Therefore would I be correct in stating, your focus is on training and the enforcement of the points?**

**Paul:** Yes along with making solutions easy. If protecting something to prevent spillage is a half hour task, then it is less likely that protection will put in place for a short term activity. It is working with the people to understand what they are trying to do along with taking a practical yet appropriate way to take the task forward. It is

training that is a two way dialogue rather than me just telling you.

**Hattie:** Paul mentioned earlier about concrete wash out being an issue on construction sites and where possible we try to avoid it, therefore removing that potential source of pollution. Designing out these issues with new technologies is preferable, but if that is not possible, then training and communication becomes vital to ensure everyone is on board with requirements. We also like to recognise when people do do things right and recognise and publicise that, rather than always talking about the negatives when things aren't done right.

**Noel:** How frequently do you repeat training with members of staff?

**Paul:** We have a training program that covers health, safety and environmental content which is typically a three year cycle. This is supplemented with alerts and bulletins that will feed off historical incidents or changes in requirements. We also give a short tool box to keep them up to speed with things that have happened or requirements that have changed.

Everyone who comes onto a construction site as a new person to that vocation will go through site induction and environmental content including an overview of spill prevention.

**Hattie:** It sounds like we have a very similar approach to training. We also do what Paul has outlined, plus requiring a number of individuals

have specific spill response training. We also drill the emergency response procedure on a regular basis.

**Noel:** You mention that bulletins are provided where necessary - how are these presented?

**Paul:** Typically it will be provided in hard copy for the site manager to display. For those that are more significant it will have briefing notes attached and he will then be tasked to either capture the guys on site face to face or through briefing the 8 trade supervisors. They will then need to brief their half a dozen guys and then come back with the evidence to confirm that it has all been done. We believe that we have a fairly robust cascade procedure. Through our inspection regime we will sample some of these points to see if the guys are actually doing it in line with the new requirements (or demonstrate sufficient understanding to carry it out).

**Hattie:** Again it sounds like we have very similar approaches, creating a display document which can also be used almost like a tool box talk.

**Noel:** Is it common that the guys on site will come back with feedback and questions on how to put those new policies in place? Do you get any pushback?

**Paul:** You don't get a huge amount of pushback. I and some of the senior managers all go the other way and ask the site staff specifically about the topic to test their knowledge and understanding. Being humans some will be engaged with the idea of protecting the environment and see it as valuable, whereas others will simply feel that it is another bit of paper from the office. Just sending a bulletin is not enough, you need

to push and chase to make sure that it has been applied.

**Michael:** I agree it is a case of identifying what is onsite, the risks associated with that and the risks surrounding the site as well. From there it is about ensuring the training of the staff and all those who come onto site effectively. With regards to training, little and often is a good approach whilst also using case studies. It is vital to ensure that they understand what they are being told and this can be done through toolbox talks. It is about making it easy for everybody.

**Hattie:** We find that there is sometimes some discussion surrounding new policies, but that is a good thing to get different opinions, discuss concerns on approaches we have chosen and hear how things could be done better. It improves the understanding of all involved.

**Noel:** How do you go about creating a spill training plan with sub contractors and what do you expect them to bring to the site spill prevention plan?

**Hattie:** Subcontractors play a vital role in making sure our spill prevention procedures are followed. This includes things like having appropriate storage facilities on site, not keeping potential polluting materials on site, having appropriate drip trays and spill response equipment and protecting drains and watercourses. We produce site training plans and procedures, which we expect subcontractors to follow, however they are always open for discussion.

**Paul:** We want a plan that covers everything and everyone that comes onto site, so rather than them turning up with a plan of their own, we really need them to feed into ours.

**Noel:** What about the equipment and products that are brought onto site? How does responsibility get split between yourselves purchasing

**"You don't need to break the bank to be in control and prevent spills effectively."**



**the spill protection equipment and any contractor needing to provide that as part of the service?**

**Paul:** If we are close to a water course and have a concern then we will get out and liaise with the EA, put a boom out and maintain it. If the risks are such that the ground workers diesel, the carpenters and the roofers material could end up in the watercourse, then we don't want half a dozen set of booms because a contractor may pack up, take the stuff away and then nobody will know that this protection is gone.

We typically take responsibility for the first tier fundamental controls. You need to bear in mind that if there is a case of pollution it is probably the occupier of the premises and therefore the Principal Contractor who will receive the first contact. Details and materials of the controls around storage, double skinned bowser for fuel and a schedule of products that a contractor may be bringing in are the kinds of controls that we are expecting them to support us with.

**Hattie:** We tend to identify risks and requirements and pass these down to our contractors to implement, and haven't found any issues with duplication of effort. With protection of water courses this often comes down to the groundwork contractor, who has the greatest risk of causing a silt or fuel pollution incident. With close management and awareness of what is going on this approach works for us.

**Noel: Would I be right in saying that any sub contractor coming onto site would only need to be responsible for equipment that is specific to their tasks?**

**Paul:** Yes. With groundwork we will expect them to have spill kits around refuelling, a small kit in some of their excavators and manage it on a task specific basis. The over arching site controls will be under our control.

**Hattie:** Each contractor is responsible for their fuel bowsers, refuelling, COSHH storage, drip trays under static mobile plant, spill kits, etc. But we take that principle a bit further as I explained, the subcontractor would also be expected to protect the potential receptors. So perhaps protecting drains, water courses, etc where they are working.

**Noel: How does the EA envisage the relationship between sub-contractors and those contracting when it comes to designing an adequate spill prevention framework?**

**Michael:** Everyone on site has a responsibility to protect the environment but the overall responsibility will rest with those who are in control of the site. They are responsible for managing all chemical storage and deliveries etc. It should be them that put together the spill prevention framework, but they will need to do that in conjunction with sub-contractors who are the people that know exactly what the materials that are coming onto site are and the way that those materials are being used. Maybe just some of the people on site will understand the equipment and so it does have to be a collaboration between main and sub-contractor, so we can ensure that issues are being fed up and down between the contractors. There also has to be training of everyone on site even if it is just a delivery driver who is coming to do an order, he needs to be aware of what the site specific conditions are.

**Noel: When an instance occurs where a subcontractor hasn't kept within the guidelines of the principle contractor, how is the reimbursement of any work that the EA needs to take out considered? Does the**

**“We produce site training plans and procedures, which we expect subcontractors to follow, however they are always open for discussion.”**

**fault still lie with the contractor because they own the site?**

**Michael:** It is site specific - as long as the principle contractor were able to show that the subcontractor had not done the work in the way that they had been told to, then it would be likely that any recharge would be looked at through the sub contractor rather than the principle contractor.

**Paul:** I would reiterate that the focus is on the right place. Because risk assessment is something from the health and safety perspective that most contractors understand, using these same principles but with an environmental edge will help them to understand what could go wrong at an early stage. This in turn will help them create plans to help preventing issues going wrong.

**Michael:** Although we are often criticised for having huge amounts of guidance, our working at construction and demolition site guidance, which we call 'Pollution Prevention Guideline 6' which was worked on with the construction industry as well as ourselves, has been very well received. It is a good place to go to help understand the risks that a site poses. As well as identifying those risks, it actually gives practical guidelines as to how they can help mitigate those risks with case studies and so forth.

**Noel: In terms of the volume of information that the EA is providing, how is that generally being received by your team, Paul?**

**Paul:** As part of my role I have a responsibility to take a lot of this content and pick out the relevant points and convert that into Bovis Homes speak. Whilst these days there is a lot of material around consultation and the like, we do our best to pick through the issues that matter as they fall into place. We try and keep guys abreast of the key requirements. We do recognise that environment is important and we are there to set the employees up with all of the tools and knowledge that they need. I agree with Michael that PPG6 was quite a radical departure from how a lot of their information had been presented in the past, with pictograms and language that is pitched at the site team, it is a very powerful document to help give information.

**Hattie:** We always find the EA documentation clear and easy to understand. I agree with Paul that PPG6 is an excellent clear document which we refer our site teams to, particularly the case studies section.

**Noel:** On that point we will finish. Thank-you very much Paul and Michael for joining me today and sharing your views.

“PPG6 is an excellent clear document which we refer our site teams to, particularly the case studies section.”

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## ROUNDTABLE

# How to ensure the disposal of hazard waste and liquids both during and post construction phase

### Moderator



**Louis Wustemann**  
Managing Editor, Health  
& Safety at Work

### Panellists



**Martin Ballard**  
Group Environment  
Manager, Willmott  
Dixon



**Steven Spencer**  
Environmental Manager,  
Bouygues UK



**Peter Kelly**  
Environmental Manager,  
Sir Robert McAlpine



**Tim Morris**  
Technical Advisor,  
Environment Agency

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**Louis Westerman:** What are the key hazardous wastes, in liquid or solid form, that crop up on your site and how do you do to instruct staff on disposal?

**Steven Spencer:** The first thing I think of is asbestos. Focussing on liquids it's the concrete washout and any liquids used in paints, oils and moulding oils. We manage the disposal of them through training of people and inspections of sites. We make everyone aware that consent is needed to discharge everything and that no liquids should enter water courses. This however results in sites being more cautious with liquid hazardous wastes than they are with solids because of the costs of testing and so forth. If items aren't properly labelled and handled it costs a lot in the longer term to rectify the situation.

**Martin Ballard:** The hazardous wastes we face are three fold: demolition material, from buildings we take down, presents a hazard due to asbestos and other unknown substances within them. From an excavation perspective though, it would be the contaminated grounds of any fuels or oils which need to be managed. CL:AIRE protocol is an important tool. We then have hazardous materials and liquids used in construction activity, that need to

have the right designations, including containers, drums, canisters and part used materials. We manage this with visible and well signed hazardous waste areas set up on site. If the site is going to have more than 500kg of this waste per year it will need to be designated as a waste site, followed up with training. Training will be based on the site's environment plan of what protocol to follow in each of the construction phases (demolition, excavation and construction) by trade. There needs to be toolbox talks and if there are any other particular issues, these will be picked up by our internal inspection and site audit with communication supported by environmental blitz or alerts.

**Peter Kelly:** We work in a similar way, with empty spray tins being the main day to day hazardous waste issue. I think for the industry it's about making sure our supply chains understand what is and isn't hazardous, otherwise things that are potentially hazardous can end up being disposed of as general waste.

**Tim Morris:** The panellists have raised nearly my whole list of concerns! Two points I'd like to make are that a non hazardous waste designation on a material does not necessarily mean that it is not a pollutant or

a danger to human health. The hazard assessment is not a risk based assessment. The other point I'd like to make is one Martin raised, which is about mixing: you can turn a little bit of hazardous waste into a lot of hazardous waste by in appropriate segregation. Our main issues relate to asbestos and contaminated grounds. These are our biggest tonnages and our most problematic waste streams in terms of managing them through the waste process.

All of the points raised about minimisation, segregation and storage are ones I agree with.

**Louis:** Given the waste streams that you are talking about with asbestos and contaminated grounds, what situations raise risk levels?

**Steven:** For us, inappropriate handling and where waste is taken. A specific example that comes to mind, not with my current company I hasten to add, was with oil based paints ending up in mixed waste skips, with oil waste paint dripping down the edge of the skip! For me it's about training and ensuring they are aware what to do with different substances and to keep them segregated, engaged and aware.

**Martin:** Trade personnel need to appreciate the impact these hazardous materials can have on people and the environment. With Stephen's example, many would see an empty tin rather than a potential contaminate that needs to be disposed of in a suitable way. Contaminated land is the largest challenge, the size of skips and ensuring that hazardous waste bins are in the right place is another major point for us to keep on top of. Site teams need to be aware that even with a couple of tins being placed into a mixed waste skip, this can put the entire skip at risk at becoming hazardous and incurring higher skip fees as a result. We suggest to build managers that when they do spot something in the wrong bin, to take a photo of it, raise an alert and get the message to focus on standards expected with site teams.

**Louis:** If you ask environmental managers anywhere in the country I believe they will say that contamination of waste streams is one of their biggest headaches. Peter, do you have any thoughts on this?

**Peter:** We have our ongoing surveillance and training to keep on top of this problem. More of an issue for the industry, I think, is our supply chains and staff accepting non-specification compliant materials and in particular, inert material such as soil, onto sites through a lack of knowledge. We need to ensure that what we are being supplied with is clean and specification compliant, otherwise this can be expensive to clean up.

**Martin:** There is a resource and cost efficiency aspect to this. Materials brought onto site in the construction phase need to be used sensibly and fully to get the optimum level possible to avoid them becoming waste.

**Louis:** Research for this debate showed that one of the most significant problems construction site managers felt they faced was left over hazardous waste from

previous contractors or occupants. What pre site checks do you conduct and what guidelines would you have for sub contractors on this issue?

**Steven:** Typically we undertake a geotechnical and radar survey (in instances where we take responsibility for the ground conditions). This should satisfy us in respect to any level of contamination regarding the makeup of the soil, water table, etc. Where appropriate we would also undertake an additional environmental survey if required as part of the tender process. We do this to assess and manage the risk & costs right from the beginning.

**Martin:** Site investigations at the outset include the same geo tech radar ground surveys, as well as site investigations.

It's important to understand prior site use and potential risk before demolition or construction on site.

Recently a site discovered oil had been left on site in drums covered by over growth. Given that it was an old garage there was potential for a legacy issue. What the properties were used for and the potential legacy issues remaining on site need to be well considered.

**Peter:** We do the same checks and employ specialist contractors who are experienced in this kind of work and remediate the site appropriately. I don't feel it is a huge issue for the industry as main contractors risk assess a site at the point of tendering for work and then manage it with their specialist subcontractors.

**Louis:** Tim, do you see many cases of contamination arising because of poor handover and information transfer between contractors?

**Tim:** Information can get lost and anecdotally I hear that some site investigations may be done in a certain way to get a certain result. The panel though has covered most of the issues – site history and carrying

out geotechnical and radar surveys. The only point I would add would be security at the site, possibly pre construction, can help prevent fly tipping as this may happen after a site investigation. Checking previous pollution incidents at or around the site is something the Environment Agency may be able to provide. For example if there was pollution within a stream this might show up but not actually be on the footprint of the site - this might be an indicator that there is something not quite right at a development site which may need more investigation.

**Peter:** When you take on a site it is often at your own risk, so we don't take anything for granted. We have our own procedures for checking the site and looking at historical information.

**Martin:** It is about taking the information but then validating it with your own research.

**Tim:** It is heartening to hear that is the approach the panel is taking. All the work that is done on a site investigation pre construction may not always get down to the eventual waste holder for contaminated land. Therefore they won't necessarily have all of the site investigation information. It is about making sure that everyone in the waste chain has all the information relating to the site.

**Louis:** What does the panel believe the Environment Agency can do, or do more of, to support the industry in limiting the frequency of waste and liquid dumping more generally?

**Steven:** The prosecution guidelines from the Environment Agency favour a collaborative approach and only favour taking enforcement action where it is necessary or in the public interest. When dealing with the construction industry this favours the fostering of a 'cover-our-ass' approach, where the right boxes are ticked but the actual engagement element is missing. My suggestion to the Environment Agency would be



to either take a harder line with the industry or with everyone in general.

Relating to permitting, there is no way for us to know the level of enforcement relating to breaches of permits because the figures aren't published. If the Environment Agency want the industry to accept that hazardous waste is a serious issue then I would suggest that they collaborate more with the likes of the Institute of Environmental Management and Assessment IEMA and the United Kingdom Contractors Group UKCG to ensure that prosecution numbers, along with case studies, are at the bare minimum made available, but ideally pro-actively fed into it.

**Martin:** The 500kg threshold is not very helpful because it is hard to know the volume created at the start of a project, so knowing whether or not to register for a permit is difficult. We take a blanket approach for all sites and this could be an area to look at.

**Peter:** It is the old adage with the Environment Agency that you will get a different answer across different parts of the country depending on who you ask. It would be good to make sure that we can get consistent advice about how to deal with issues. The Environment Agency has got better in providing practical advice but consistency would be a key issue for me.

**Tim:** In response to Stephens point, depending on the seriousness of the offence, it may be straight to prosecution in some instances but it does depend on the circumstances of each case. In terms of getting the information out to permit procedures, we do publish it in some reform and is available for every waste site. It may be slightly indirect as it includes Operational Risk Appraisal ("OPRA") profile, which includes a compliance score. This score can be looked up on our public register so that if you have concerns about particular sites you can check their inspection and compliance records.

**Steven:** However, there is nothing published at a country level which provides detail such as, 'this month watch out as x, y and z have received this many breaches so you better buck up your act!' You would actually have to search this out on a site by site basis.

**Tim:** Unfortunately we have limited resources with officers on the ground. A couple of initiatives that are coming up for this financial year are our waste stream approach which is looking at 'cradle to grave' histories of waste going up and down the chain. One of our primary waste schemes is our construction waste scheme because some of the issues that we have had particular issues with are soils and aggregates. Another point raised was regarding having a construction site with important materials. You need to do very good checks on the provenance of that material and ensure that you can trace it back through its history. This can lead to some very expensive errors taking place on waste sites when they are removed.

**Steven:** The issue of inconsistency is a big one; you may get different offices getting different answers to the same questions.

**Tim:** I work in one of the national technical teams and our ideal method is to have a network of offices who deal with specific issues regularly so that they know what the technical answers are. If we have internal and external queries that we feel relate across the country then we have a mechanism to get the summary of the information published on our internal website so that people can see what our approach is. I admit that there are instances of giving different answers but we are

working very hard to get consistency across England and Wales.

**Peter:** As a further point, I think a pressing concern for the industry is plasterboard and what is happening and may happen to it in the future. The waste industry would benefit from a better understanding of what can happen to plasterboard, where it can be recycled and how to deal with it economically.

**Tim:** Plaster board is an issue. One of the campaigns was to look at fines from transfer stations containing gypsum whose levels were much higher than they should have been. Considering that most of this material probably ends up in landfill, and although it is not a hazardous waste but has got huge potential to create environmental problems. On the back of this campaign we are doing more intensive work on the transfer of stations and tracing those waste streams back up.

It is going to be an ongoing process for both of us and one the Environment Agency is very focussed on resolving

**Louis:** On that note I'd like to conclude. Thank-you to all the panellists for participating and sharing your thoughts.

**"The prosecution guidelines from the Environment Agency favour a collaborative approach and only favour taking enforcement action where it is necessary or in the public interest."**

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## CHECKLIST

# Building a spill prevention kit for your specific needs: tips from the experts

### The Spill Control Group

British Safety Industry Federation

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**T**his document offers a simple guide to implementing effective spill prevention & control. It is designed as a checklist to aid you to ensure the basic steps have been covered. It does not offer detailed information on how each step should be undertaken, (which can be gained from other sources), but is a practical guide to help you put in best practice to avoid spills and effective controls, should an incident occur. However this guidance is not comprehensive and particular circumstances within your own site or operation may require additional actions.

Successful spill prevention and containment requires forethought, preparation and planning before an incident. It is essential that each process has been fully analysed to prevent spills and systems are in place to treat any spill in the most effective manner, should they occur. Without forethought, reaction to any spill maybe inadequate, inappropriate and possibly dangerous, putting your company and the environment at serious risk.

### Risk Assessment

- o **Liquids**
  - Which liquids do you have or may you be handling and in what quantities?
  - Have you read and understood the material data-sheets for each liquid?
  - Where are they stored and how are they moved?
  - What current arrangements do you have to prevent spills?
  - If a spill occurs how could the liquid enter the wider environment?
  - How can these entry points be protected?

### Control Measures

- o **Review the existing control measures.**
  - How can these be improved?
  - Are the spill prevention and control procedures formally written down, communicated to all staff, updated regularly and available as simple checklists to ensure compliance?
  - Is any bunding fully sealed and capable of holding the potential quantity
  - Is the equipment you are using robust enough, protected from damage and in good condition. (For examples pipes, joints, tanks etc. Are you using double skinned tanks, crash barriers for protection etc)?
  - Have the work systems been examined to minimise the risk of spills, are the staff supplied with appropriate equipment (such as mechanical handling devices, appropriate pumping equipment, etc) to prevent spills?
  - Does the site allow safe access for vehicles and suitable and safe sites to load and unload materials?
  - Do the drains have a sealed system? If not how can they be sealed?
  - Are the hazard areas, storage & waste reception areas clearly marked and appropriately protected.
  - Are all waste deliveries to the site booked in advance to ensure you know the potential hazard you may be faced with?

## Transport and Handling

- o **Drums of Waste Liquids**
  - ❑ Are drums of waste liquids always packed in Overpacks to contain spills in transport?
- o **Bulk Liquids**
  - ❑ Are discharges of bulk liquids to and from tankers always supervised?

## Storage

- o **Review existing storage arrangements**
  - ❑ Are the tanks sufficiently robust (double skinned), protected from puncture (perhaps by vehicles or sharp objects) and clearly marked.
  - ❑ Are the pipes, taps and other equipment in good condition and sufficiently robust and protected?
  - ❑ Are storage systems locked to prevent theft and vandalism?
  - ❑ What secondary protection is in place to prevent spills from spreading
  - ❑ Has consideration been given to reducing the amounts stored to reduce risk?

## Site

- o **Site planning and design**
  - ❑ Is the site traffic separated from storage, piping and waste reception areas?
  - ❑ Is the drainage sealable to prevent pollution?
  - ❑ In the event of a spill, is the equipment required to respond to a spill 'handy', of an appropriate type and in sufficient quantity?
  - ❑ Are liquids that may react with each other, keep in separate locations?
  - ❑ Are the Spill Kits suitable for the liquids on site, been evaluated to BS7959, readily available and of sufficient quantity to deal with any likely spill.
  - ❑ In the event of a spill has a clean-up and disposal system for the spill waste been formulated and is this communicated to the workforce?
  - ❑ Are any small quantities of hazardous liquids or aerosols held in lockable cabinets?
  - ❑ What arrangements are in place to contain Fire Water run off in the event of a fire?

## Personnel

- o **Training and capability**
  - ❑ Does the staff understand the toxicity of the chemicals they may come into contact with and how to protect themselves?
  - ❑ Have the staff been trained in techniques to avoid spills (including training on any specialised equipment they may use)?
  - ❑ In the event of fuels and oils being delivered onto site have the staff been trained

- Have the staff been trained in 'first response to spills' and the immediate actions they should take in the event of a spill occurring?
- Have the staff been issued with appropriate safety equipment to fully protect them and trained in its use?
- Do the staff know and understand where the spill response kits are kept, what they are suitable for and how best to use them?

### Review & Inspections

#### o Have the systems, equipment and staff training been reviewed recently?

- How regularly is all equipment inspected? Is this often enough?
- Are tanks, connectors, pumps, hoses etc regularly inspected (inside and out)? Is this often enough?
- How often are the vehicles examined to ensure they are in good condition? Is this often enough?
- How often are the systems used reviewed?
- Have the staff received refresher training to ensure they will act competently?
- Are records kept of incidents and the actions taken? Is there any trend which can be overcome?
- Is there a system in place to ensure lessons are learnt from best practice on other sites and a full review and systems reevaluation takes place when an incident occurs on your or other sites?

### Management

#### o What is the management policy, attitude and responsibility?

- Does the management of the site fully 'buy into' the spills control and prevention policies? (If not, why not?)
- Are all incidents reported and analysed for improvements in procedures, equipment and response?
- Does the company wish to go beyond just compliance and create best practice and understand the benefits this will deliver?
- Does the company understand the implications to the business should a serious pollution incident be allowed to occur?
- Does the company have or is considering approval to ISO 14001, or another accreditation scheme, and the benefits that this will bring?





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