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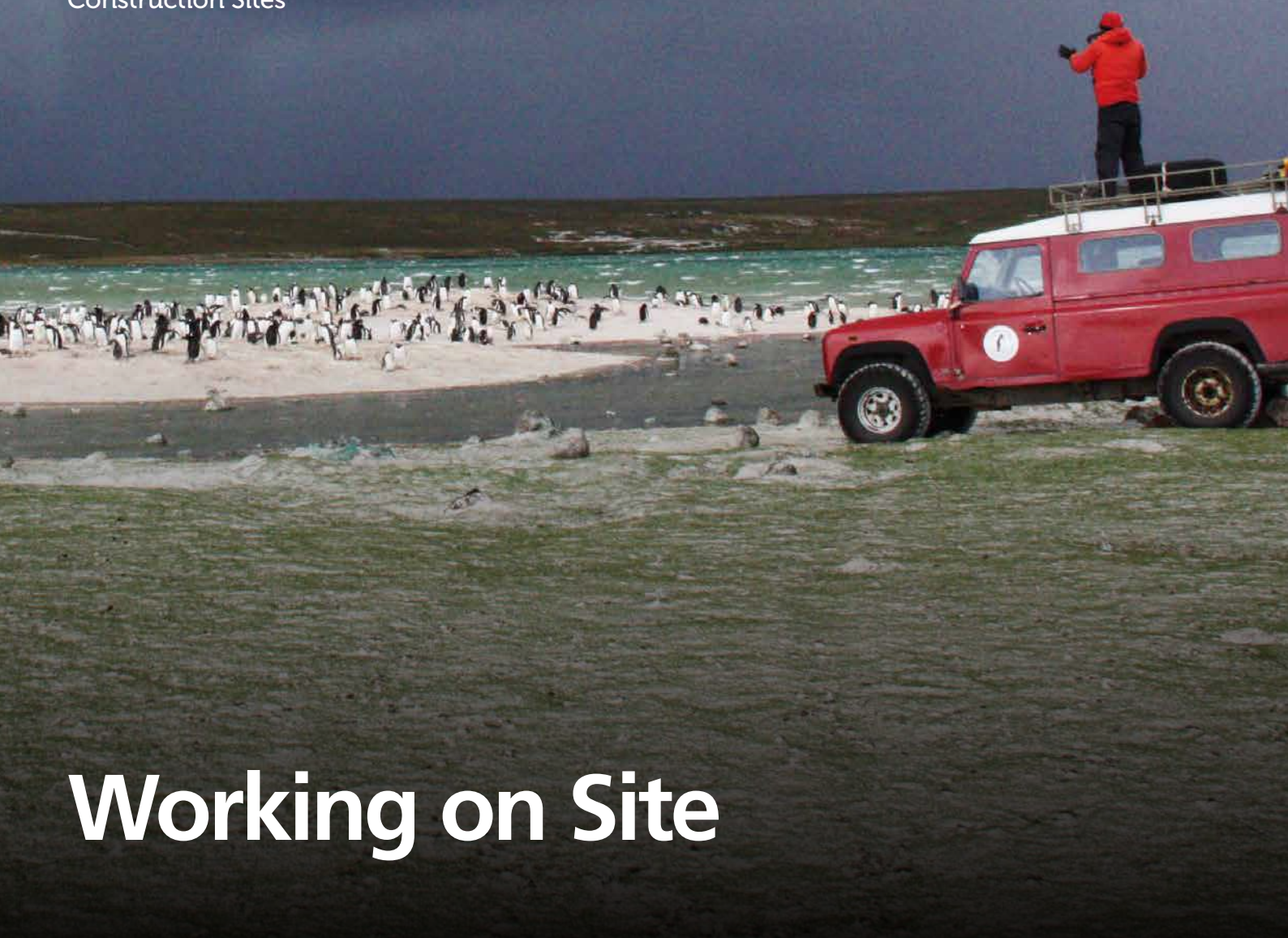

Working on Site

Does the E in EnvCoW Stand for Evolution?

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Environmental management on construction sites is a varied, diverse and fascinating aspect of the industry and one where direct involvement of environmental professionals, including Clerks of Works, can achieve great benefits. However, through perhaps a lack of understanding, mentoring or cross-discipline learning, opportunities are being overlooked and – worse still – lost in a sea of overly generic, standardised 'mitigation'.

In 2022 it will be the one year anniversary of my involvement with the management committee of the Association of Environmental Clerks of Works and being appointed to a newly created role at JBA Consulting: Discipline Lead for Construction Environmental Management and EnvCoW. I feel it's a good time to reflect on the evolution of environmental management on site and the role of the Environmental Clerk of Works (EnvCoW). It is important to distinguish an EnvCoW from an Ecological Clerk of Works, or ECoW. An ECoW provides on-site ecology support whereas an EnvCoW focuses primarily on compliance.

A quarter of a century since my first site-based environmental role, I have been privileged to work in some amazing and challenging environments with some wonderful and a few very challenging people.

I dictate this Viewpoint through freely available voice-recognition software on a laptop with more processing power than our entire design team's PCs back then. This, and the advent of the digital Environmental Impact Assessment and digital Construction Environmental Management Plan, illustrates how much technology has evolved and how much we now take for granted in day-to-day environmental management. But is this evolution reflected in what we encounter on site and in our discipline?

In the mid 1990s I produced my first environmental constraints plans for a cross-country pipeline project. This was a project I had known from the start: I'd undertaken Phase 1 habitat surveys, interdisciplinary route finding, and landscape and visual impact assessments, all undertaken by walking the site and surrounding environment. We produced environmental mitigation documents, assembled contractual clauses and chose the winning tender.

Creating the environmental constraints plans was not a complicated task, it was just the logical thing to do to portray the environmental message for the project site team. It consisted of numbers, letters and circles on a series of plans which showed what the main restrictions were, *distilled from the supporting documents.* It was a simple, site-specific and effective approach. It worked.

What I hadn't realised at the time was this was actually quite revolutionary, and an on-site environmental advisor was more revolutionary still. My initial 2 week posting became 8, which became 52, as the value of that on-site environmental role became clear to those working on the project. I realised then that site environmental management was my ideal habitat: the combination of understanding what was specified and also having an influence on its implementation and solving problems ticked all the boxes for me. The key to success when it came to audits was keeping communication clear and targeted. I guess this was the dawning of EnvCoW as a discipline.

Back then, it was generally accepted that the contractor would sweat the last minute of workable time out of the equipment they owned. The accepted wisdom was that pumps and plant (that is, construction equipment) leaked oil, fluids and fuel. The solution was adopted from the workshop: a drip tray. A drip tray was a shallow-sided metal or plastic tray placed beneath engines to contain any spilled or leaked oil, basically like a large roasting dish. It was a simple way to stop the pollution, but, with rain, drip trays can fill up and overflow. We then had environmental maintenance crews who were responding and emptying and gathering tens or hundreds of litres of oily water for disposal as hazardous waste at vast cost, but we accepted it and it became part of the routine. The battle line with hydrocarbons had been drawn.

Over the last 25 years, drip trays have evolved. We have interceptors, with a secondary containment area that holds hydrocarbon but allows rain water to flush through; we have interceptors with covers; we have water-permeable, hydrocarbon-absorbing products; and we have oil-absorbing pads, nappies, sausages, rolls, pillows, sheets, duvets and rags. All are deployed on sites to continue the hydrocarbon war. Some site stores are beginning to look like soft furnishings departments.

Plant has also evolved: there are bunded engines, which are enclosed in a leak-proof housing; we also have double-skinned tanks to prevent leakage, integrated drip trays and smaller, more efficient engines that hold less of the pollutants. Fluids and fuels are now based on vegetable oil and there are clauses in contracts which limit the age of plant that can be used. Plant is now much more likely to be hired as required from specialist hire companies. Gone are the days of crews gathering oily water for disposal.

And yet we often still see brand new plant and equipment parked over some form of secondary drip tray or absorbing product, as if somehow during a rest period it will suddenly discharge the content of its fuel tank, or throw out its hydraulic system. Many of these secondary drip trays or absorbing products are rendered ineffectual by site conditions: many of these products

have been developed in workshops and factories where the natural environment is held at bay. They work a lot less well when sitting in a puddle, or clogged up with silt; they are, however, brilliant when used correctly.

So why do we still have this situation, where we continue to provide 'mitigation' to plant that doesn't need it or, worse still, 'because it leaks'? (If it leaks, remove it from site as it is not fit for purpose.) Or is it, as I believe is the situation, that the drip tray ghost has been haunting site procedures without challenge for decades? I'm not suggesting that we stop using emergency response provision or grab bags to clean spillages or any other controls required to deal with an unforeseen event, or that drip trays and absorbents don't have a valid place. But as an industry we need to discuss why we are still apparently blindly repeating the drip tray mantra.

I recently visited a site where a brand new 12 tonne tracked excavator was parked up over an absorbent pad with a capacity of around 2 litres. When I asked why the pad was there I was told "in case a hydraulic hose bursts". After discussion on the risks associated with parked plant and also how, for it to be suitable, the pad would need to absorb probably 100 times that capacity, it transpired that the pads were deployed because it "says so in the environmental documents". I thought that may have been the case.

Drip trays and absorbent pads are a way of illustrating what I feel is becoming increasingly prevalent in our perceived management of a whole range of environmental aspects on site: the inclusion of standardised, generic terms and phases copied from guidelines and best practice documents without full understanding or consideration of the implications or reasons behind them. This, in turn, leads to the implementation of inadequate or irrelevant mitigation which deflects and dilutes the real environmental management message.

So, let's be honest, how many of us undertake audits where we arrive on site on a prearranged day to find carpets of bright new absorbent pads under machines and plant, and double-bunded fuel tanks? Let's be even more honest: how many of us tick the audit box against "are plant situated on drip trays or secondary containment or absorbent pads"? But how many of us feel empowered enough to ask the site manager what happened to the pads that were here yesterday, and please can they show you the hazardous waste storage provision and provide the documents for the duty of care and waste transfer file?

Why then, with a new generation of fresh young minds entering the industry, have we seemingly forgotten over the decades that it is OK, nay encouraged, to reduce the amount of generic information making its way through the project stages to be enshrined in site procedures? We have overlooked that due process is to refine and focus the message, and not simply copy the last stage over.

I see standardised mitigation for a range of aspects set out at the early stages of project development and carried through, without interpretation or challenge, to later stages. It is copied into unwieldy, cumbersome, impractical and in some cases useless on-site management systems. Is there a perceived need to have vast tomes of management documents? More specifically, is there a perceived risk of 'missing something' rather than undertaking robust assessment of risks and providing specific, tailored mitigation? Is there a reluctance to be absolute?

Is this a direct consequence of the digital approach, whereby there are fewer human brains involved in the process and geographic information system (GIS) wizardry is expected to interpret the relative risks associated with each of the featured layers? Or have we forgotten that no number of algorithms will replace experienced, trained, rational human thought when it comes to managing environmental risks and mitigation? Is there a perception of 'risk' and that risk must also be banished in the same way as hydrocarbon spills: to absolute zero, no matter how impractical the proposals will be?

In truth, I believe we have forgotten that the more simple and precise the message, the more accurate the results will be. We have forgotten that the reports, the GIS and the designs – all perfectly laid out digitally and downloaded onto the latest viewing device – are actually something in the real world. This is a place where water will only flow down hill unless it is pumped, a place where protected species haven't read the guidelines and a place where the environment is the ultimate client.

This brings me back to the environmental constraints plans a quarter of a century ago. They contained tailored information specific to the site: there was no information 'just in case'. They summarised the agreed environmental aspects. They were, in essence, definitive and they evolved as the project developed.

It is crucial that site-based aspects of environmental management are considered in the early design stages, at that initial site walkover. They need to be developed alongside the evolving design and involve all disciplines. At each stage the relevance of the previous stage assessments should be discussed and challenged: refining methods, designing out risks, discussing mitigation measures, assessing appropriateness and the associated risks, and considering whether any mitigation is required at all.

We, as environmental professionals working in the construction industry, must empower our new recruits through all disciplines and encourage them into this interesting and dynamic part of the sector. We must mentor and educate them, take designers to sites, take site engineers to design offices, take ecologists to construction sites and take engineers on ecological surveys. We must explain project and construction processes, and plan and programme routine education and awareness site visits, looking at the long-term advantages of integrated design not the short-term perceived financial cost of a day on site. We must teach the team to assess environmental risks (and opportunities) and develop practical, achievable, focused mitigation. We should promote the integration of holistic environmental management throughout the whole project story, starting at the initial site walkover. To quote George Fleming, founder of the Association of Environmental Clerks of Works: "we must get engineers to think like environmentalists and environmentalists to think like engineers". When we get this balance and understanding the E in EnvCoW will certainly mean evolved, and perhaps also efficient.

About the Author

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