



The Eyes of a Cat (III)!

Category III checks not only have the potential to improve an engineering design, but can also be key to preventing major calculation oversights.

That is the view of HBPW engineer, Tommy Ng, who has completed the Cat III checks on the designs for a new bridge that will carry the westbound three lane single carriageway of the A45 between junction 6 of the M42 and the NEC / Birmingham Airport interchange.

"Level III of the Cat system of checks is probably the most stringent, requiring third

party checks for mechanical and structural equipment, as well as independent design verifications.

"HBPW was invited by Carillion to overview the design drawings of WSP's Birmingham office for the A45 job. The mandatory checks are a valuable exercise but can take many weeks to complete because, simply put, I have to look at their work, produce my own models, compare the two, identify the differences and, if necessary, make recommendations.

"By involving WSP's Leeds office

further down the line, I am pleased to say that the design drawings were much improved illustrating, yet again, the value of having independent eyes examine a specific job," added Tommy.

A Category III check is usually required on moving bridges, highway structures and is often compulsory on a large range of equipment in the nuclear and offshore industries for devices such as cranes, lifting beams and bearings.



Female Engineer 'Quotas' Potentially Insulting To Women

An engineering chief's call for recruitment 'quotas' to redress the imbalance of female engineers within the UK sector, is both impractical and, potentially, insulting to the opposite sex says HBPW Partner, Jon Livesey.

He was reacting to comments by Naomi Climer, president of the Institution of Engineering Technology (IET), who has attracted huge reaction since commenting that 'the time is right' for setting numbers of women employed by engineering firms.

But, according to Jon Livesey, the issue is far more complicated with far-reaching implications.

"If you are going to introduce quotas into the engineering sector then, surely, the teaching profession would have to come under scrutiny or any other sector for that matter?"

"If a woman goes for an interview at an engineering firm where she knows a quota system exists, how will she ever know whether or not she is the best person for the job or simply there to fulfil a

potential quota need? That is demeaning.

"There is a major danger that women engineers become totally devalued by a quota system because they will never know 'why' they were employed."

Jon Livesey believes the problem should be addressed at school.

"The problem stems from lack of awareness in the classroom. When children are at school they invariably learn about 'jobs and roles' but so few, including our educators, know what an engineer does and the profession is often written off as 'digging holes in the ground.'

"Consequently, professional aspects of the job are ignored, awareness is low and young girls are not inspired to become engineers, even though they may be strong at maths and science."



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New ways of working have to go hand in hand with training and a quantum shift in mind set and attitudes because it is not enough to say 'it needs to happen'. How do we start to make it happen as an industry? is an equally important question. You may be interested to read our article in this edition in which HBPW engineers give their gut reactions to so-called 'technology' and futurologist Fran Rabuck's comments.

As Partner Paul Monaghan says: "I would argue that technology, in its purest form, is brilliant and capable of delivering so much, however, from a practical standpoint, many would concur that it is currently far too powerful for many of the people charged with using it."

Mark Hansford is right and so is Paul Monaghan. Moving forward the real challenge is to bring about change whilst recognising that change will not happen without pro-active training support at branch and root level right across the industry.

On another practical note, the HBPW team continues to work on some great projects so please keep an eye on our blog to see what we've been up to (www.hbpw.co.uk).

Meanwhile enjoy the read!

PAUL WITHERS
MANAGING PARTNER
HBPW LLP

Welcome



Paul Withers - Managing Partner

"The status quo is no longer an option."

I read the editor of New Civil Engineer, Mark Hansford's comments with some interest as he referenced the £460bn construction programme outlined in the UK's National Infrastructure Plan.

With the global construction market forecast to grow by more than 70% by 2025, I suspect that he is right in advocating the need for fundamental change in how the industry delivers infrastructure projects.

Broad Group of China may have constructed a 30 storey tower block in 15 days but to what extent are their methods being cascaded, or adopted, by engineering and construction professionals across the world? Moving forward perhaps we have to ask what evolving 'best practice' now looks like?

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HBPW Supports Wind Power Revolution In Hull



Top: Alexandra Dock Bottom left: Alexandra Dock Master Site Plan Bottom right: Offshore wind power ambitions

HBPW is playing its part in the wind turbine revolution taking place in Hull as Siemens is poised to create hundreds of jobs at a new turbine manufacturing facility.

Together with development partner Associated British Ports, Siemens is investing £310 million in offshore wind turbine production at Hull's Alexandra Dock, directly creating 1,000 new jobs and many more during the construction phase and in the supply chain.

ABP, in turn, has appointed the GRAHAM Lagan Construction Group Joint Venture to develop the Alexandra Dock site for the Siemens facilities, which will include the building of three new berths and a roll-on, roll-off ramp.

HBPW Managing Partner, Paul Withers, said: "The project includes the partial filling in of

Alexandra Dock, constructing new lead-in jetties to the East and West sides of the facility and the construction of a new deep berth quay. Our job is to design some of the temporary works that will facilitate this.

"The green energy debate continues apace and, whatever your views about wind power, this project is clear evidence that the focus on developing cleaner alternatives to oil and coal remains high on the political and commercial agendas. We are proud to be part of such a major initiative."

Hull City Council granted planning permission for the development so that work on the pre-assembly, project construction and logistics and distribution facilities could begin.

Siemens has appointed leading UK contractor VolkerFitzpatrick to build its 40,000sqm wind

turbine blade manufacturing factory which is scheduled for completion this autumn to allow for the production of the first blades by the end of this year. Scunthorpe based Clugston's has also been asked to build a 12,300 sqm service and logistics facility on the site.

The UK is one of the best locations for wind power in the world, and is considered to be the best in Europe. Towards the end of 2015 there were approximately 6,650 turbines with wind accounting for 9.3% of the UK's electricity requirement.

Client: Associated British Ports
Contractor: Graham Lagan Joint Venture

A Lidl Bit Of Good News!

As German global discount chain, Lidl, continues to buck the trend by stealing market share from Britain's so-called 'Big Four' supermarkets, HBPW is now playing an increasing part in its on-going success.

Since gaining a foothold in the UK in 1994, Lidl, whose pedigree dates back to the 1930's, now has more than 600 stores and, with 4.4% of the UK grocery market firmly under its belt, the chain is building more stores whilst extending existing outlets.

Geoenvironmental Engineer, Jay Fox, said: "They have an on-going programme of store improvements across the country as part of the chain's drive to develop in store bakeries and improve parking facilities at existing outlets.



Lidl on the rise - the supermarket now holds 4.4% of the UK grocery market

"As part of this programme HBPW is assisting Lidl's Northern region with ground investigations and geoenvironmental advice at a number of sites including Ossett in West Yorkshire, Driffield, Brigg near Scunthorpe and Woodseats in Sheffield.

"The challenge is to carry out our work without disrupting any of Lidl's operations, which can be difficult because of some of the areas we need to access," said Jay.

"Many of the chain's stores are located in older buildings and sometimes Lidl doesn't always have access to records indicating how the original foundations were built. Consequently we have to dig pits and boreholes so that we can get the necessary information for engineering design and to ascertain whether, or not, there are any contamination issues."

Jay said some of the stores were only two years old and already needed to expand. "Over and above existing stores, we are also working with them on new retail developments and hope to be involved with many of these at a much earlier stage. I am delighted that our initial trial period was a success and that we are now to become a Framework Consultant."

Lidl, along with other discount supermarket chains, have gradually been eating into the market share of the biggest supermarkets, and have provoked a fierce price battle among the top four chains.

November's Kantor Worldpanel figures showed that Lidl's sales rose by 19% in the latest quarter from a year earlier.

In contrast, sales at Tesco, the UK's largest supermarket chain, fell 2.5% from a year earlier, while Morrisons dropped 1.7%.

Client: Lidl



A handpit allows existing foundations to be inspected



People love the Lidl discount giant!



Working in a tight spot during key trading hours

Technology Is All Very Well But...

The potential of new technology will only be fully utilised if contractors and site workers are given the necessary training but, even then, it cannot be expected to be the panacea to all engineering challenges.

That was the overriding view to emerge from a straw poll of HBPW's engineers following comments by leading 'futuologist' Francis Rabuck, director of technology research at Bentley Systems in the US and also a member of Global Advisory Council for the World Future Society.

in the rain. Imagine trying to enlarge a drawing on an iPad with your gloves on or when a piece of metal has smashed its way through your tablet screen!"

And, whilst Ross Hardy was quick to praise the advent of Cloud Point Laser Surveys – a sophisticated machine produces a 3d image of a building, bridge or structures in a fraction of the time taken using more traditional methods - he also expressed caution in other areas.

Partner Paul Monaghan, said: "I would argue that technology, in its purest form, is brilliant and capable of delivering so much, however, from a practical standpoint, many would concur that it is currently far too powerful for many of the people charged with using it. Either technology training has to be improved or there has to be a balance between using those elements we are already comfortable with, alongside some of the proven, but more traditional methods of construction, A1 hard copy drawings for instance!"

Although iPads are not always best on dirty, wet construction sites, technology will no doubt play a bigger role in the industry in years to come!



iPad tablet



Hi-tech iWatch

He recently set out his vision as to how new hi-tech products in development will improve the way infrastructure projects are delivered, commenting that the industry had not been the quickest to adopt technology.

But, when quizzed about Rabuck's views, HBPW engineers said the 'coal-face' reality was often very different.

Partner Jon Livesey said: "If you think about what many people on site actually do, they are working with timber and reinforced steel, often

"Construction sites are dirty, weather can be inclement and just as you are going through a drawing on a tablet you don't want to find yourself in the position where your iPad is powering down due to lack of battery! Hard copy A1 drawings are hard to beat and it's easy to get another copy if they become spoilt by rain. You can also get the entire picture at one glance using a single piece of paper, without the need to scroll across a never ending drawing!"

Francis Rabuck maintains that whilst the iPad has kick-started the industry's interest in technology, the picture in 5-10 years could be very different with construction workers on site using devices on their wrists to give them information about a task.

"This will link into building information models and drawings and I'm also pretty sure we will see digital pens, allowing workers to make very fine markings on drawings at pixel level while they are working on site," he said.

Clean Bill Of Health For HBPW

HBPW has passed its quality audit with flying colours, gaining 100% marks from the British Standards Institution's auditors.

The firm developed its own quality assurance scheme several years ago, not only to meet ISO9001 criteria, but to control and complement the innovative and lateral processes for which it has become known amongst clients and contractors.

Associate Paul Jacklin, who has responsibility for quality standards within HBPW, said: "It allows the simple integration of quality procedures, demanded by clients such as Network Rail and Electricity Alliance, and, by incorporating them into the independently accredited system, HBPW is able to ensure

that adequate, experienced and well-trained resources are always available, to ensure that designs and details are delivered on time and to programme constraints."

He said that HBPW had developed its own scheme in order to achieve greater flexibility and to ensure that engineering innovation was not unduly hampered by over rigid and inflexible systems and processes.

"The HBPW Consulting Quality Assurance Scheme is divided into two parts, Policy and Implementation and includes formal procedures which ensure that risks and hazards are, as far as possible, eliminated by design and, where residual risk remains, that this is drawn to the attention of the Principal

Contractor," added Paul.

During the recent audit HBPW did not receive any 'non-conformances'. "In simple terms we achieved a perfect score so I think it is fair to say that we were pleased!" he said.

Up to date calibration of measuring and testing equipment used by HBPW, is also ensured by the QA scheme.



Paul Jacklin

