



Rail Memorial To HBPW Engineer

A commemorative plaque is to be erected at Putney Railway Station in memory of David Till, the HBPW engineer who died, sadly, from cancer at the age of 65.

Dave, as he was affectionately known in the office, was a chartered structural and civil engineer. He passed away on 7th July 2013, shortly after completing work on his final assignment, the £9m re-vamp of Putney station in south west London.

HBPW's Managing Partner, Paul Withers, said: "We are so touched that the main contractors at Putney, Nationwide Rail and C. Spencer,

have decided to make this lovely gesture.

"Dave was a great character and his demise was a great loss to the office in view of his practical,



pro-active approach to all his assignments, in addition to his quiet, calm nature and dry sense of humour."

When complete the redevelopment at Putney, part of the Department for Transport's Access for All initiative, will see:

- The installation of three new lifts to make the station fully accessible
- An expanded concourse
- New ticket gates
- An extended canopy on platform 1
- Provision of an accessible toilet.

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Someone once asked me what 'value engineering' was and whether it was engineering 'spin'! Hopefully not as our editorial on Llandudno Station will prove. Value engineering is about using intelligent thinking – by all parties – in order to produce a result that is cost effective and represents great value for money. I hope the copy proves illuminating!

Towards the end of October and as late as early November, there was still some freak weather that saw temperatures extraordinarily high for the time of year. However, as our Environmental Engineer Jay Fox, is quick to point out in this edition, heavy downpours at the front end of the year will most probably play their part in adversely effecting future construction projects as a result of rising groundwater.

Meanwhile, Singleton Birch has been delivering their own take on 'value engineering' with the installation of an AD Plant in order to massively cut their electricity bills.

Yes, it has been a year of contrasting temperatures and equally diverse assignments. Enjoy the read and here's to 2015. Happy New Year!

PAUL WITHERS
MANAGING PARTNER
HBPW CONSULTING

Welcome



Paul Withers - Managing Partner

If ever formal confirmation were needed then here it is.....the last 12 months HAVE raced by and we are all a year older! It has been a year of contrasts, flooding in the early part of 2014 and something bordering an 'Indian Summer' in the latter half, at least that's what the collective media liked to call it.

It's appropriate, therefore, that the content of this newsletter should also be so contrasting.

Firstly I would like to pay tribute to former HBPW engineer, Dave Till who, as many will be aware, died from cancer in mid 2013. However, as a result of his premature death at just 65, Nationwide Rail and contractor, C Spencer, have now decided to erect a commemorative plaque at Putney Railway Station in his memory and in recognition of the final job on which he worked. We are all delighted.

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Where There's Muck There's Electricity!



Singleton Birch's new AD Plant

Inset: Andy Torn (right) pictured with Lord Haskins

The UK's leading independent lime supplier is slashing its considerable electricity bills after installing an Anaerobic Digester plant (AD) on the surface of an old quarry and using silage, and other biomass, to keep the power on!

Singleton Birch, which has a quarry at Barnetby, North Lincolnshire, is noted for its progressive thinking and hit on the idea of building an AD plant at its Lincolnshire site.

But, whilst the benefits were considerable, it wasn't without challenge, as HBPW's Managing Partner, Paul Withers, describes.

"Singleton Birch decided to site the proposed plant on the surface, and in the middle, of a quarry which had been loose backfilled to a depth of approximately 18 metres.

"However, the suppliers of the plant required stringent control of settlement before siting their equipment. Subsequently boreholes indicated that the quarry was filled with loose granular material varying from small aggregate to large

boulders, and it was concluded that use of piling was not a practical proposition."

HBPW put forward a scheme to pre load the proposed plant area with about five metres depth of material brought from other areas of the Singleton Birch site. Settlement of the surface of the quarry under the pre load was monitored over a period of time and, when settlement was observed to have ceased, the pre load material was removed so that construction work could continue.

The other factor to be considered was the problem of leachate.

"Before the Plant could be constructed a rubber membrane needed to be placed across the entire site to prevent any toxic leachate - a by-product of the vegetation fuel used in the AD plant - draining into the ground."

The AD plant at Singleton Birch enables maize and other fuels i.e. sugar beet and grass to be brought straight to site and put into three large silage clamps.

Although leachate drains from the grass as it is being stored in these clamps, the rubber membrane used to cover the standing area, prevents the toxic substance draining into the ground.

"Thereafter the maize is moved from the clamps to the digester tanks where, starved of oxygen, it produces methane which is then removed from the surface of the material and used to drive the turbines which produce electricity. As Singleton Birch are a massive electricity consumer this offers a major cost saving to them. The Plant was initially installed as a 0.5MW plant but will be ramped up to 2MW by the end of 2015," added Paul.

The plant was officially opened by top UK businessman, Lord Haskins.

Client: Singleton Birch
Contractor: A Torn Construction Ltd

Holistic Approach Supports Value Engineering

Value engineering and innovation in major projects only become possible if all parties involved come together to make them happen.

That's the opinion of HBPW's Managing Partner, Paul Withers. "Contractors and designers often pick up the plaudits for innovation or doing something that has taken cost out of a job, however clients and their advisors also play a key part.

"They need the foresight to provide for innovative thinking in the contract at the outset which doesn't always happen. Equally, for contractors to put ideas forward that break the mould, they also need to be

confident with the way risks, costs and savings are shared, whilst having the confidence to know that their ideas will be acted upon rather than being passively acknowledged and side-lined."

He said that in some instances contract documents were restrictive to the point that they discouraged alternatives, effectively restricting innovation and stifling value engineering.

"Our work at Llandudno Railway station proved a real winner thanks to the combined efforts of Network Rail, the Buckingham Group and ourselves.

"We were asked to undertake a design to strengthen a free standing party wall located next

to an adjacent café at the station.

"The wall had been left propped with a temporary steel frame following demolition of former station buildings and, whilst a permanent design had been formulated involving the construction of a large permanent steelwork frame, analysis of the original Victorian engineering drawings for the station walls – along with a detailed study of the local ground conditions – meant an alternative wall strengthening design was formulated using existing foundations."

HBPW's Geoenvironmental Engineer, Jay Fox, got involved and a revised engineering approach took considerable cost out of materials and construction costs whilst also minimising lost floor space.

"Could that have happened without a holistic approach that involved the cooperation of all parties? Probably not," added Paul. "Innovation and value engineering must have space to breath if they are to be given life."



Artist's impression of the new Llandudno Rail Station



UK Roads Need More Structured Planning

Politicians should think about re-structuring the current funding system used to maintain UK roads says HBPW Partner Jon Livesey.

As an influential group of MPs warns that the country's road maintenance strategy is seriously flawed, Jon Livesey has echoed their sentiments, claiming that a more planned approach would not only reduce the need for 'reactive' maintenance, but also give the country more 'bang for its buck'.

"On the one hand the Department for Transport has been cutting the roads maintenance budget by £1.2bn over the four years from April 2011, whilst on the other providing around £1.1bn of additional funding for flood repairs and repairs for winter damage, which doesn't make economic sense.

"Without doubt the DoT would get more for its money if it invested in a pro-active rather than a reactive approach. As a consequence of fluctuating budgets over the decades, it is value for money that has fallen victim to the political agenda."

According to the Chairman of the Commons Public Accounts Committee, Labour MP Margaret Hodge, public satisfaction with the state of English roads is at its lowest level since 2008.

And, in an ironic twist, compensation claims for damage arising from



Public satisfaction with the state of English roads is at its lowest since 2008

poor road conditions, cost over £31m in 2013/14 with the cost of filling in a pothole running at £52.

"It is a flawed logic," added Jon, "when you start reducing budgets in order to save money, only to end up paying out more because the so-called savings result in a problem that costs more to remedy.

"The Commons Public Accounts Committee has raised a pertinent point and, unless there is political will to change the current situation, then we can expect to be having this same debate in years to come," he said.



Climatic Changes Challenge Construction Design

If the UK climate continues to get wetter, design engineers will need to ensure they allow for rising groundwater and the looming threat of retaining wall and earthworks slope failure.

That's the stark warning from HBPW's geoenvironmental engineer, Jay Fox, following record

rain falls that left Britain wallowing in flood water last year, and homes in Somerset sandbagged or evacuated.

He said: "Met Office statistics for early 2014 indicated that England and Wales had its wettest winter in almost 250 years and new records were set for many parts of the

UK, with southeast and central southern England seeing well over double the rainfall expected in a normal winter.

"Consequently groundwater – held underground in the soil and crevices in rock – is now the highest for many years which is leading to a number of issues affecting the construction industry."

Jay said that rising groundwater levels not only created difficulties during construction work, such as a greater requirement for de-watering and pumping out of excavations in order to keep them dry, but also impacted ground stability.

"As groundwater levels rise piezometric pressures in soil also increase, particularly where the ground cannot drain due to flooding or ineffective drainage, placing added strain on ground and slope stability. The result can

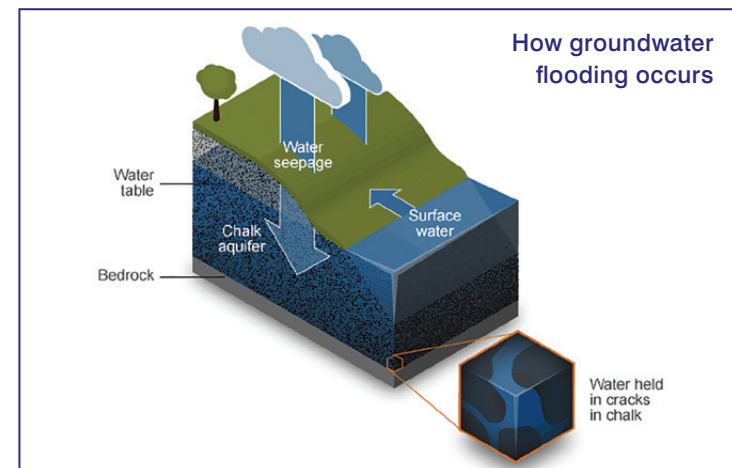


be that slopes become unstable."

He said there had been a noticeable increase in slope failures on the UK's rail and highways network, particularly in the south west.

"Many structures, particularly retaining walls, are designed on the assumption of a certain groundwater level. However, whilst prudent design assumes a worst case scenario – namely where the soil behind the wall is saturated – this is not always the case meaning many retaining walls move, or even fail, due to groundwater levels building up behind them over time.

"The resulting movements can cause major structural damage, and ground subsidence can occur many meters away from the actual retaining walls," added Jay.



Bailie & Daly The New Engineering Duo!



Roy Bailie, Edward Needham and Ben Daly

International carpenter Roy Bailie – HBPW's newest graduate engineer – has finally given up the life of an international traveller in favour of a more sedentary life in the drizzly East Midlands!

Roy, 34, who joined the firm earlier this year, left school at 16 and trained as a carpenter before beginning his life of adventure and embarking on a journey that took him to Santa Cruz in California, Australia, South East Asia and, eventually, Iceland.

A native of Newtownards, just

outside Belfast in Northern Ireland, Roy, who graduated with a Masters in Structural Engineering with Architecture from Belfast's prestigious Queens University, decided on a career change in his late 20's.

"I served my time as a carpenter and, at the age of 21, went to visit my sister in Santa Cruz, California, where I ended up staying for 12 months before heading back to Northern Ireland. Six months later I was on my way to Australia which claimed me for the next 15 months!"

After that it was South East Asia, taking in Thailand, Cambodia and Vietnam before the sun got to him!

"I decided it was time for something a little cooler and, in my mid 20's, somehow found myself applying for and getting a job as a carpenter in Iceland, a little bleaker than some of the places I'd visited previously but, nevertheless, another great life experience!

Roy is joined by Edward Needham who has been appointed as a graduate engineer in the Geoenvironmental Department.

Edward, who hails from Derbyshire, is being brought in to support department head, Jay Fox, who has been under steadily increasing pressure since joining the firm over 18 months ago.

"The department has a raft of

existing and future projects particularly in the rail sector," said Jay. Edward will be immediately involved in ground investigations, geotechnical design and developing his interest in drainage design which will free me up to further develop the contaminated land and materials management capability of the business."

Edward, who graduated from the University of Surrey in Guildford with a First Class MEng (Hons) degree in Civil Engineering, worked at Mansell plc during his industry placement year.

Also joining HBPW is CAD technician Ben Daly from Rotherham. Ben, who studied biology at Hull University, spent 10 weeks on placement at HBPW during his time on Humberside, and re-joins the company as he begins his career in engineering.