

Taking A Dip For Charity!

The charity sector is £10,000 richer after members of HBPW took part in one of the country's longest established swimathons.

The Rotary Club of Retford's annual event, now in its 29th year, took place at Retford Leisure Centre in Nottinghamshire where 28 teams and some 300 swimmers donned their trunks and swimming costumes in the name of charity!

Numerous teams from a variety of corporate, charity and community organisations, took to the water in rotation, completing 10-12 minutes swimming each, the entire event lasting most of the day.



Charity swimmers from HBPW

Forty percent of the total money raised will go to the Club's chosen charity, Guide Dogs, with the remaining 60% being donated to local charities and organisations chosen by the participating teams. Beneficiaries include Motor Neurone Disease, Sport Relief,

Bluebell Wood Children's Hospice and Rotherham Hospice.

HBPW Managing Partner, Paul Withers, who, as a former Rotary President swam for the Rotary Club of Retford team, said: "This continues to be an amazing event which raises so much money for charity. I am extremely proud of the HBPW team who did a sterling job, team members again raising over £1200 for charity in their own right!

Sinking To 'Old' New Depths

Developers working in former mining areas should seriously consider Coal Mining Risk Assessments before they even break ground, if they are to avoid the risk of huge sinkholes appearing on their development sites.

That is the stark warning from HBPW geoenvironmental engineer, Jay Fox, just weeks after a huge 90m deep shaft opened up in the garden of a house in Cornwall.

"That is a perfect example of what can happen," said Jay "so it is imperative that people make stringent checks when engaging in the buying / selling process. Coal mining, and other extractive



Sinkhole appears in Cornwall



contamination, subsidence and hazardous ground gasses, so any developer working in such an area should seek to mitigate such risk by completing a specialist study called a Coal Mining Risk Assessment (CMRA)."

The purpose of a CMRA is to review information on historical mining activities,

industries such as tin mining, have been important industries for hundreds of years but records of mining works are often incomplete or non-existent. It only became a legal requirement to keep them from the late 1800's.

"Large areas of the country, in former mining areas, are called 'development high risk areas' because the potential for mining related ground hazards is high, and developments on land affected by mining may be at risk from

their potential impact on ground instability, and any risk that could affect a development. The report should then set out a strategy for the investigation, mitigation and remediation of those risks to ensure that the site can be safely developed for its intended end-use.

"Was such a report done in Cornwall? It is difficult to know, however, one would hope that if it had been, then the potentially devastating mine workings might have been identified in advance of any development, collapse, or possible injury and appropriate action taken," added Jay.

HBPW has had extensive experience of producing CMRA reports throughout the UK in accordance with guidelines prepared by the Coal Authority and the soon to be updated CIRIA Special Publication 32 relating to 'Construction above Abandoned Mine Workings'.

"Once the review of a site's history is known, we can use data to design a strategy for further investigation which, typically, might comprise of a phased programme of rotary, probe and/or core drilling.

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We have been playing our part in the civil engineering design of Immingham's multi million pounds Renewable Fuels Terminal as well as the new £100m biomass facility at Port of Liverpool.

Then there is the wind turbine revolution taking place in Hull as Siemens prepare to create hundreds of jobs at their new turbine manufacturing facility; our engineering work is supporting Graham Lagan Construction's work on Humberside.

Not forgetting our work on various Anaerobic Digester plants which use silage and other biomass, to keep the power on and, indeed, energy from waste plants and micro power stations.

Time appears to be running short if we are to address the UK's emerging 'energy gap' and professionals more knowledgeable than me, claim that we will require 30 new gas-fired power stations in less than 10 years, if we are to plug the gap. A tall order by any estimate.

For now, it's raining outside again. Better not complain! Meanwhile we continue to work on some great projects so please keep an eye on the HBPW blog to see what we've been up to (www.hbpw.co.uk).

Enjoy the read!

PAUL WITHERS
MANAGING PARTNER
HBPW LLP

Welcome



Paul Withers - Managing Partner

If the type of work a company does is reflective of society's changing environment, then that would explain why HBPW seems to be increasingly involved in the area of renewable power and green energy.

It may sometimes appear to be forever raining in the UK, however, at a more serious level, both water and power – namely the pending lack of them – will be increasingly on the political and engineering agendas over the coming years.

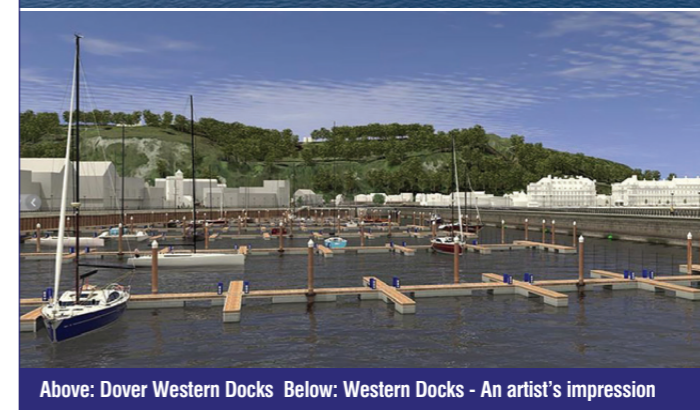
Somerset's Hinkley Point power station has been massively delayed and, over the next decade, the Institution of Mechanical Engineers indicate there may be a 55% electricity supply gap. Meanwhile two thirds of the world's population continue to live with severe water scarcity.

Which goes some way to explaining HBPW's caseload.

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The Biggest Crawler In Town!

Client: Dover Harbour Board
Contractor: Graham Construction



Above: Dover Western Docks Below: Western Docks - An artist's impression

HBPW is set to engage the services of the world's tallest crawler crane after one of the biggest lifting challenges in the UK presented itself to engineers!

The £130m Dover Western Docks Revival (DWDR) scheme will see the transformation of the water front with a new marina pier and curve designed to attract shops, bars, cafes and restaurants to the shadow of the town's unique harbour, cliffs and castle backdrop.

But, before this can be achieved, hundreds of massive tubular piles, each weighing 43.5 tonnes and measuring 1829mm, or six feet in diameter, and destined to form a foundation for the ambitious plan, need to be delivered to site, via a seagoing coaster, and landed. They will subsequently be driven into the riverbed.

Paul Withers takes up the story. "Large marine retaining walls and quays are to be built as part of the

DWDR, and Graham Construction has done a series of feasibility studies, concluding that the best place to offload the steel piles, that will support the structure, is at the existing North Pier extension, built in 1975.

"However, this has presented another conundrum, how best to unload them because, at 43.5 tonnes each, they are absolutely huge!"

Engineers have now decided to engage the services of the Liebherr LR 1300W, the world's largest crawler crane, which is expected to roll onto site later this year.

"In solving one problem," added Paul "we have created another because the existing North Pier is not strong enough to support the monster crane! In addition we will have to lower the sea bed by creating a dredge pocket so that the seagoing coaster is able to berth. However, the dredge pocket

will also undermine the existing quay structure. It has been a complete domino effect!"

HBPW has now designed engineering works that will make landing of the huge steel piles possible.

"We have designed a new concrete deck to sit on top of the existing deck in order to create additional strength. Additional sheet piles will also be placed in front of the old quay to mitigate the effect of the dredge pocket, making it possible for the piles to be landed safely and effectively."

The entire process is expected to take three to four months. "This must be the longest unload in Dover's history," said Paul!

Overall Dover Port handles up to 160km of freight in a single day as well as large amounts of tourist traffic through its six ferry berths, multiple assembly parks and custom built infrastructure.



The world's tallest crawler crane!

Client: Somerset County Council
Contractor: Carillion Plc

Chip Lane Footbridge

HBPW Leaves Its Stamp On County of Somerset

HBPW has left its indelible engineering mark on the county of Somerset as a major £22m project moves towards completion.

The Northern Inner Distributor Road (NIDR) scheme in Taunton will ease congestion in the town centre and on Priorswood Road, as well as providing access to the Firepool regeneration site where there are ambitious plans for development, job creation and house building.

And, as part of the scheme, HBPW has designed two bridges for principal contractor Carillion plc on behalf of Somerset County Council, both of which are now complete.

Firepool road bridge, which was picked out for comment by the County's highways chief, has been designed by HBPW Engineer, Tommy Ng.

He said: "It is a 110 metres long three span steel concrete composite 'ladder deck' bridge. The steelwork alone weighed in at more than 350 tonnes but this amazing structure now crosses both the River Tone and the Bridgwater & Taunton Canal.



Tommy Ng



Firepool During Construction

"Two steel beams were lowered into place at the northern end of the bridge and those alone measured 42m each with a combined weight of 100 tonnes. A special 1,000 tonne capacity crane had to be employed to hoist them into place."

The NIDR scheme could help create thousands of jobs now that the Firepool regeneration site is accessible to developers and house builders.

Another part of the scheme features the 40 metre span Chip Lane Footbridge, also designed by the HBPW team and which opened last year. It is of steel Warren Truss construction and



Firepool Road bridge

crosses both the existing railway and the new Northern Inner Distribution Road.

Chip Lane replaces an existing footbridge, however, unlike the old structure, the new one features a combined footbridge and cycle way with improved disability access thanks to the provision of wider access, ramps and stairs.

Work on the mammoth project first began towards the end of 2013.

Councillor Harvey Siggs, Somerset County Council's Cabinet member for Highways, said:

"The NIDR is a major infrastructure project and a lot of work we've completed so far has taken place behind the scenes so the new bridge at Firepool represents a major visible milestone in the overall project, and I'm delighted to see how it's taken shape."

The whole scheme is scheduled to finish towards the end of this year.



Chip Lane Now Open

Clad It's Nearly Finished!

Client: Network Rail
Contractor: Galliford Try Plc

Work on Lincoln's long-awaited level crossing bridge is now complete, marking another engineering success for the HBPW team.

Engineering design on the multi million pounds Network Rail scheme on High Street, was led by HBPW Associate, Mark Partridge, who oversaw it after on-site work began in early 2015. The level crossing bridge will ease congestion and waiting times for pedestrians.

Mark said: "Work officially started with the remodelling of a property at 179 High Street, former home to retail units occupied by Superdrug and The Sleep Shop, but now one side of the new steel structure. There was a short delay after asbestos was discovered in one of the former shops, however, everything was eventually brought to a positive conclusion."



Artist's Impression - The original idea

Lincoln MP Karl McCartney and Network Rail Route Managing Director Phil Verster originally launched the scheme, Mr Verster commenting at the time: "I can't stress how important this (scheme) is. Lincoln High Street, as well as Brayford Wharf, are the two highest risk level crossings in my area.

"By putting the footbridge in place, what we actually provide is 24 hour, seven days a week, opportunity for pedestrians to cross the railway safely."

Mark added: "Historically the High Street level crossing barrier was sometimes closed for as long as 15 minutes at a time, prompting some individuals to become frustrated and run the gauntlet of an oncoming train. This new structure will massively reduce the risk of pedestrian injury."

External cladding on the structure was finished recently along with glazing to either side of the crossing corridor.

"This has been a major development that involved the diversion of certain services such as cabling and water pipes, however, the long term benefits will massively outweigh the short term inconvenience," he added.

High Street Bridge under construction



Lincoln High St Level Crossing viewed from the Upper High Street



Lincoln MP Karl McCartney has campaigned against the issue of high risk level crossings alongside other transport issues.

He said: "I'm very pleased to see that as a city we are getting there with transportation. I also want people to know that the city of Lincoln is a very welcoming destination. It's a momentous moment for the people who live and work here but also the people who visit."

Network Rail has sought advice from Lincolnshire County Council, City of Lincoln Council, English Heritage, University of Lincoln, the Brayford Trust, Lincoln business

groups and local residents as part of the design and development of the High Street footbridge.

City of Lincoln Council leader Ric Metcalfe said: "There used to be an old wooden footbridge here that fell into disrepair. The new footbridge is well designed, there will be lifts and it will reduce the impact on the High Street created by the rail corridor.

"This, combined with the new East West Road link will mean that both pedestrians and traffic will be able to move around the city centre far more easily."



Lincoln MP Karl McCartney with Network Rail MD Phil Verster. Photo courtesy of The Lincolnite