

A MAGAZINE PRODUCED BY THE ENVIRONMENT AGENCY'S NEECA2, NCF2 AND NCMF PARTNERS

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Insight into
efficiency and
innovation

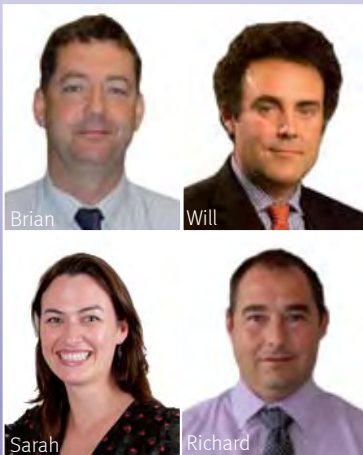
Spotlight feature:
pathfinder projects

THE BOARD

After 16 editions we thought we would introduce ourselves and remind you about the aims and objectives of Current Magazine.

Current Magazine has one overarching aim which is to support and maintain the 'one team' culture that underpins our Frameworks. We aspire to be an invaluable tool for sharing information about corporate messages, key projects, initiatives, best practice, innovation, and success from across the whole of the Framework community. The magazine is fully practitioner led with all articles provided by members of the integrated team.

The magazine is produced on behalf of the Operational Framework Management Team by an editorial board which includes a single representative from ncpms, NEECA2 and NCF2, with an independent editor. Decisions on design, content, editing, timing and distribution are made jointly by the board on advice from the Environment Agency Communications team. The cost of production, editing, printing and distribution is shared by each of the partners.



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CHAIRMANS CORNER:

LORD CHRIS SMITH

One of the most rewarding things about being Chairman of the Environment Agency is the chance I have to get out to all parts of England and Wales, to see the work that's being done by the Agency and our contractor, consultant and business partners on the ground. I recently went up to Wigan to open the final phase of the flood defence scheme for the town, a £12m scheme that reduces the flood risk for some 600 properties from the River Douglas.

There were some key features of the scheme that stuck firmly in my mind. There was the skilled and innovative approach that had been taken to the dam across the river, with a central section that was designed to let normal flows of water through, but to hold back flood water when necessary. There was the engagement with the local community that had taken place in designing and then undertaking the project. There was the environmental improvement programme that had run alongside the flood defence work, including planting trees and making an area of natural land much more safely accessible for local people.

It seemed to me that this was a really good example of bringing three things together: the excellence of the project design and execution; the national funding and certainty of programme that came from the grant-in-aid funding; and the crucial involvement of the local community. And as we now move into the new – and very different – world of partnership funding for flood defence work, we're going to need to keep these three things very much in mind. The excellence of design and execution is something that we, and our partners, can be very proud of. In scheme after scheme I've seen beautiful and clever design, and very high standards of workmanship and finish. Let's keep this up.

The other two things will be a continuing challenge, though. Having the certainty and confidence – and cost-effectiveness – of a national programme, alongside the genuine involvement of local communities and the essential ingredient of local partnership funds, is going to be difficult to secure. But if it can be achieved, we can realise real gains for flood defence. I believe that it is possible to marry local contributions and involvement with national strategic planning. In order to succeed, though, both sides of that equation need to respect and recognise the importance of each other. We'll need to be quicker to seize opportunities that arise; we'll all need to work more closely together; we'll need to be more flexible within the overall parameters of an agreed programme; and we'll need to remain firmly sighted throughout on the outcomes of better flood protection that we're trying to achieve. If we do all of this, I firmly believe we can make partnership funding, and the local and national dualism, work well. It'll be a challenge, of course. But schemes like Wigan show it can be done. ■

Lord Chris Smith, Chairman

PROFILE

- Elected as a councillor for Islington in 1978.
- Elected to the House of Commons in 1983 as MP for Islington South and Finsbury and appointed to the Environment Select Committee.
- His Private Members Bill – the Environment and Safety Information Act – became law in 1988.
- In the 1990s, he served two years as shadow spokesman on environment protection.
- From 1997-2001 he was a member of the Cabinet as Secretary of State for Culture, Media and Sport.
- Appointed to the House of Lords after standing down as an MP in 2005 and currently sits as a non-affiliated Peer on the crossbenches.
- He founded the Clore Leadership Programme in 2003.
- Appointed Chair of the Advertising Standards Authority in 2007.
- President of the SERA from 1992-2007.



Lord Chris Smith (third from right) at the Wigan Flood Alleviation Scheme

A DAY IN THE LIFE... OF A RIVER SCIENTIST

As a river scientist I work on a number of Environment Agency projects through both the NEECA and Strategic Flood Risk Mapping (SFRM) frameworks. My work involves a wide range of activities to help map and manage flood risk. I have been with Royal Haskoning for four years since graduating from the University of Birmingham with an MSc in River Environmental Management. This is an account of a day in my working life.

A typical day in the office begins with a team meeting to discuss progress and upcoming deadlines. Being part of a number of project teams, prioritising deadlines and raising issues is best done with the whole team present. I regularly work with colleagues from across the UK, so these meetings are often carried out via webcam or teleconference.

I have been on part time secondment to the Environment Agency's Flood Risk Mapping and Data Management team in Lichfield for the last six months. My role during this time has been to develop a flood risk management plan for the River Rea catchment. A typical day involves analysing hydraulic and hydrological data and testing flood options. This role has required working with others on flood risk management to achieve sustainable solutions.

I often spend my lunchtimes arranging Chartered Institute of Water and Environmental Management (CIWEM) events and meetings. As Chair of the West Midlands New Members Group, I am responsible for managing the 2011/12 calendar of events. By interacting with industry peers I've been able to encourage creative thought and networking. When I am not hosting events, I regularly attend Midlands CIWEM events in the evening to

meet people and increase my knowledge of the Water and Environment industry. As CIWEM Young Member of the Year I am often invited to events as a representative. I have represented both CIWEM and Royal Haskoning in this capacity in the recent past, including travelling to Rotterdam to host a workshop.

I am also involved in reviewing hydraulic modelling results and working with a design team to create innovative solutions to various catchment issues. Results such as these often feed into finalising designs, or flood risk assessments. Royal Haskoning are currently carrying out a large project to improve fish passage in Midlands region. As the West Area technical lead for this project, I spend time assessing modelling results against the design criteria for the purpose of developing fish passes.

My role is both interesting and challenging. I get to work with a range of clients on a variety of projects and am constantly reading new policy and guidance documents to keep up to date with technical best practice. Working in this industry makes a real difference to the UK environment and peoples lives. ■

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PROFILE

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ROLE OF THE ECC PROJECT MANAGER: THE ENVIRONMENT AGENCY PERSPECTIVE

In response to demand from project teams this article provides some insight into the Environment Agency's view of the role of the ECC Project Manager and how it should be approached to achieve our broader commercial aims and objectives as well as the requirements of the contract.

Historically, the Environment Agency Project Manager undertook the role of ECC Project Manager alongside their normal duties. It became clear that carrying out both roles was difficult and indeed could compromise project completion and the quality of contract administration. So we decided to separate the two roles - the ECC Project Manager should always be independent of the Environment Agency Project Manager, the designer and main contractor.

The ECC Project Manager role in relation to the responsibilities under the NEC ECC contract is very well defined and this considers the overall duty to act 'in a spirit of mutual trust and co-operation'. This is key to making sure that the integrated team working on the scheme operates at its best. What is not so clear are the other aims and aspirations we have for the role. We are keen that the role should be a conduit supporting the Environment Agency in getting the best out of our partners. Crucially, in partnership with the Supervisor, the post holder should provide us with 'eyes and ears' on the ground in terms of health and safety, forward planning of operations, risk management and dealing with community issues. So our aspirations go beyond the role defined in the Contract, taking some of the burden from our Project Managers and empowering the person best placed to carry out the task in hand.

In relation to health, safety and environmental risk management, the ECC Project Manager should champion good health and safety

performance through excellent team working and positive challenge to the contractor and consultant teams. In order to achieve this, a good working relationship with the CDM Co-ordinator is crucial and, through the current arrangements, this can give positive results.

While the key decisions that the ECC Project Manager must make are defined in the contract, it is important that the Environment Agency Project Manager is part of that decision making process. This means that any potential risks are managed properly, avoiding surprises with cost increases or community issues.

In projects where we've had contractual difficulties it is often because the ECC Project Manager has been brought in too late or has had inadequate resources. When assessing budgets and timing for this role we need to take the complexities of the project fully into account, and should consider whether there is a need for the role to be full time.

In summary, the ECC Project Manager role is pivotal in operating the ECC Contract but also in providing an overview on health and safety, buildability, problem solving, and team working. This can produce real benefits for the integrated team in successfully completing projects. ▣

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PROFILE

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Environment Agency

Don Robinson, Project Team Manager, ncpms, North East: "A good ECC Project Manager can be the difference between success and failure. The basic role requires efficient prosecution of the contract - decisiveness, quick resolution of issues, timely contractual responses and organisation. However, a decent ECC Project Manager will also be challenging, fair, highly communicative and will maintain good contractual relations. A really good ECC Project Manager will offer the Environment Agency Project Manager sage advice, be their full representative on site, be the glue that helps to bind the team and will maintain focus on the project goals, tuning his or her input to the best effect. It is a critical role."



NEW PROCUREMENT STRATEGY LAUNCHED

We published our first Engineering and Environment Procurement Strategy over 10 years ago. Much has changed since then: expectations of health and safety performance, certainty about climate change, outcome measures, partnership funding, Water Framework Directive, major flood events, the Pitt Review, and many other issues. These have all significantly affected the type of projects that we want to invest in and the way that those projects are carried out.

We recently published our Sustainable Engineering Procurement Strategy for the next 10 years and it's likely that a lot will change in that period. The new procurement strategy sets out how we will continue to deliver more for less, in a changing environment. It will ensure that we have the flexibility to deal with our future workload.

A new start for frameworks

Our current engineering and environment contractor and consultant frameworks, NCF2 and NEECA2, will expire in March 2013 and we have just started the process of procuring their replacements. We will have a more diverse range of projects in the future and we will have to make our supplier arrangements available to other public bodies working with Defra, such as the new Lead Local Flood Authorities. The new suppliers will need to work with a more diverse range of clients than before. This wider range of clients using the frameworks will further drive the dissemination of best practice.

Working with local authorities

We have already been talking to local authorities about what features they will need in the new frameworks and that process will continue. Local Authorities are represented in the project board that oversees the new frameworks and they will have an input into the commercial workshops to finalise the framework design.

The Sustainable Engineering Procurement Strategy takes account of the Government Construction Strategy which was published last year. That document sets out how, through five key principles, we can achieve efficiency savings of up to 20 per cent. We have started to test, through pathfinder projects, how we might apply those principles to make the FCRM programme more efficient. We will soon be managing projects featuring project bank accounts, target cost setting led by the client, and contractor led projects. Some of these pathfinders are featured on pages 12 and 13. We need to continue to develop contracts for longer term programmes of work.

A learning experience

We are learning from the experience of other public sector clients through working groups established under the Government Construction Board. There is much to learn from them and we have much to be proud of; perhaps most notably our approach to integrated team working.

So there is much to do. The first two generations of frameworks have changed every aspect of our performance. We must continue that improvement and that will require us to be flexible, eager to trial new techniques and be courageous in their implementation. We are looking forward to hearing how our potential new partners will help us achieve our objectives.

We are keen to hear from Environment Agency staff who can help us make the right choices for our future construction partners. And we warmly extend that invitation to any local authority colleagues that may read this magazine. ■

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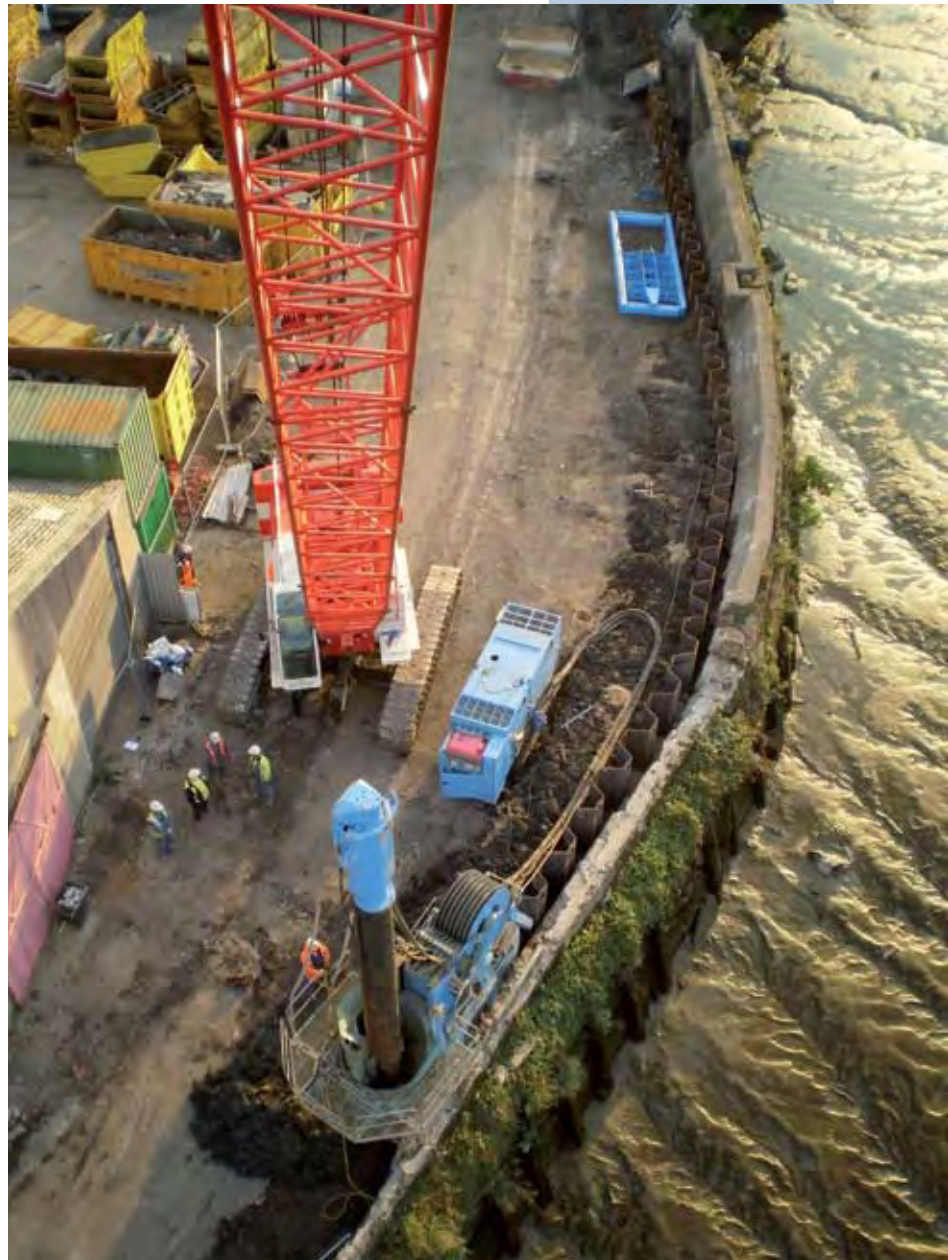


PROFILE

Name:
Mark Hagger

Title:
Commercial Development
Manager

Organisation:
Environment Agency





RETROSPECTIVE:

SILK STREAM FLOOD ALLEVIATION SCHEME

The Silk Stream catchment collects water from the London Boroughs of Barnet and Harrow and discharges via rivers in the Silk Stream catchment into the Brent Reservoir. Bury Farm and Edgwarebury Park were the final two of six sites in a catchment wide flood alleviation scheme which we completed in 2008. The project provides sustainable benefits to the local area by reducing flood impacts to properties and businesses downstream and improving the habitat of the local area.

The work involved constructing two temporary flood storage areas centred on Edgwarebury Brook. Each flood storage area consists of an earth embankment with concrete control structure and culverting plus environmental enhancement work. The two storage areas contain 34,000m³ and 14,000m³ of flood water. Both were designed to meet the requirements of the Reservoirs Act 1975 although this only applies to one of the reservoirs.

During design and construction we involved the community with the local residents flood group helping to gain public support and pressure to get the planning permissions and consents we needed for the work.

Talking with the local Royal Society for the Protection of Birds and bat groups we found that the local habitat had deteriorated over the years due to intensive farming and lack of habitat management. As a result we created improved habitats and enhanced fauna within the area.

Since we completed the work in 2008, the reservoirs have stored flood waters on a number of occasions, reducing the impacts to properties downstream. The scheme as a whole reduces the risk of flooding to approximately 1140 properties in a 1 in 100 year flood event.

Key facts

- Community liaison provided insight into the local environment and how this could be enhanced
- Working with community pressure groups provided additional public support to the project and assisted in obtaining planning permissions and consents

The habitat creation and enhancements have produced a range of habitats. The local RSPB group have recorded significant increases in bird life in the area and a number of bird species have nested in the vicinity which had not previously been recorded.

The scheme has also improved the look of the area and turned a piece of land which was used for intensive agriculture back to a range of habitats, improving the area not only for wildlife but local residents who use the area for walking and horse riding. □

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Project Team: Environment Agency, Halcrow, Jackson Civil Engineering

PROFILE

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Mike Franklin

Title:

Project Manager, ncpsms

Organisation:

Environment Agency

Dak Gor, Technical Specialist, Environment Agency:

“We are extremely pleased with the Silk Stream Flood Alleviation Scheme. In January 2011, after the snowmelt, Bury Farm and Edgebury FSA stored a considerable amount of water and protected properties downstream. The other FSA's have also stored flood water, but so far a significant rainfall event has not occurred. Overall since construction we believe the scheme has protected properties from flooding and proved their worth.”



TOTAL PROJECT PROGRAMME MANAGEMENT AT STEART

As part of their early contractor involvement, ncpms asked Team Van Oord to maintain the overall project programme for the Steart Coastal Management Project. The project involves creating a major new wetland over a 475ha site in North Somerset. Valued at around £18million, 'total programme management' has been essential in allowing the mobilisation of teams and resources efficiently.

Establishment of the programme was at the beginning of the detailed design phase and includes tasks for all partners, gateways, numerous constraints and risks. Managed on a monthly basis it maps out all the logic links between tasks across the whole project including the construction phase, with clear visibility of float and critical path activities. The programme also assigns products (with ownership) to tasks so each partner is fully aware of what is required, and by when. One-month and three-month near term look-ahead reports and programmes allow the team to focus progress discussions on the critical tasks and deadlines.

This approach highlights the impact on both programme and financial risk resulting from task slippage within the overall programme. As a consequence, team working and collaboration has been greatly enhanced.

The management of the overall project programme by the Contractor (who is able to deploy specialist programming skills) has helped free the consultants' staff of the task and provided them with a clearer picture of the impact of their design progress on subsequent activities. This was of particular importance given that the advanced site works were programmed to run concurrently with the design process.

Total Project Programme management on this scheme has helped the team to meet milestones that were established over 16 months ago. [■](#)

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Project Team: Environment Agency, Team Van Oord, Halcrow, EC Harris

Richard Cox, Project Manager, ncpms: "The intertidal habitat at Steart will offset losses of intertidal habitat that are occurring elsewhere in the Severn Estuary. Through the creation of different habitat areas for wildlife and carefully planned networks of paths, a reserve is to be developed that will become a major amenity for residents and visitors. The scheme is a complex and somewhat controversial one. However, the development has been greatly helped by integrating the activities of all those involved in a single programme maintained by the contractor."



PROFILE

Name:
Jayne Johnson

Title:
Senior Planner

Organisation:
Team Van Oord

ROMNEY HYDROPOWER PLANT: PART 2

Since the last issue of *Current*, Jackson Civil Engineering's work on the hydropower plant at Romney Weir has been progressing well. The team successfully installed both troughs and screws before Christmas, bringing the plant a step closer to completion.

The second of the two 20 tonne screws were craned into place on 20 December, in front of the world's media. The story has generated much interest in the media because, not only will the plant benefit the Royal household, it is also the first of its kind on the River Thames. It paves the way for further low-carbon hydropower schemes on the river.

Before it was installed, we had to extensively modify the weir to accommodate the turbines. We removed two of the weir gates completely and extended the wing walls so that the turbines would fit. We also installed a new type of 'Larinier' fish pass which will allow a wider range of fish species to migrate upstream for the first time in over two centuries. The turbines have rubber bumpers on the blades to minimise risk to fish passing through.

We are now installing the gearboxes and associated equipment as well as installing the penstocks. We hope to complete the plant and bring it online by April this year. ▣

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Project Team: Environment Agency, Atkins, Jackson Civil Engineering

Key facts

- At their peak output, the turbines will produce 300kw of energy every hour, which will be fed directly to Windsor Castle, with any surplus being fed back onto the grid to benefit homes in the Windsor area.
- A 4-metre flood gate will be linked to the hydropower scheme and will open automatically when river levels are high to ensure there is no increased risk from flooding
- It is estimated the turbines will cut carbon dioxide emissions by 790,000 kilos per year

Howard Davidson, Environment Agency's South East Director: "This is the first time the Environment Agency has leased a weir to a private company to generate and sell green energy. It's exciting because the scheme shows hydropower has the potential to deliver low-carbon electricity and help wildlife."

PROFILE

Name:
Richard Barnes

Title:
National Framework
Manager

Organisation:
Jackson Civil Engineering

Brian Crofton, Contracts Director, Jackson Civil Engineering: "We are delighted to be involved with this scheme. Hydropower definitely has a place in the UK's future energy mix and we hope to be involved in more schemes going forward. From an engineering point of view, this project has been fantastic; it's always good to see our industry being involved with new projects where we combine innovation with existing assets on our rivers to create renewable energy for the future"



EFFICIENCIES AT RIPON FAS

The Ripon Flood Alleviation Scheme is a £14.4m project to protect the city of Ripon against flooding. We have developed a solution that both successfully protects against flooding but is also significantly more efficient.

Due to its location at the confluence of three rivers, Ripon has a long history of flooding dating back to 1315 and has suffered six serious flood events in the last twenty years. The scheme involved constructing a 400m long by 9m high earth dam upstream of Ripon on the River Laver. The dam has two culverts running beneath with an orifice plate at the upstream end to begin impounding during floods. The dam was constructed using 126,000m³ of cohesive fill won from an adjacent borrow pit.

We took a holistic approach to the scheme. At Northbridge we built general flood defences as well as a new channel to re-use an existing bridge arch that had become disused. At Borrage Lane we used an individual design, working with each home owner to find the most aesthetic solution whilst preserving the purpose of the scheme.

We varied construction techniques and design depending on the location. At Alma Weir, the focal point of the river at Ripon, we temporarily flumed the river so we could stabilise the banks remove old concrete structures and replace them with a new stone-clad flow gauging structure. Within the Fishers Green area, we re-designed sheet piling works as a composite toe-pile (gabion) cohesive fill solution to improve the look and reduce the risk to a sewer main running parallel with the river.

We have recorded a total of 38 items on the Value Management Register covering some £850k of savings. These savings include the following construction categories as below:

- Design development during construction – we've saved £262k by reusing and repairing existing flood defence walls, changing the

design to speed up construction and reduce disruption to residents, using flood gates instead of road raising and by redesigning a substantial length of sheet piled wall to a more sympathetic and cheaper combination of toe piles and gabions.

- Sustainable material usage – we've saved £186k by extending the planned borrow pit, recycling excavated river bed material to use as fill, altering the clay specification to allow winter placement, using 6F2 instead of Type 1 where appropriate and reusing temporary road material as piling mats.
- Method improvements – we've saved £79k by altering the dam site access to avoid diverting overhead electricity cables, raising the permissible height of fill stockpiles, avoiding the need to divert a footpath by building a new permanent route early on, providing a biodigester to the dam site cabins, and negotiating use of council land to act as soakways in lieu of numerous settlement tanks.

The project has won the Considerate Constructors Bronze Award 2010-11, Green Apple Bronze for the As Built Environment and Architectural Heritage and was shortlisted for the ICE Centenary Trophy – Yorkshire and Humberside Branch. The scheme protects 548 residential and 96 commercial properties from a 1 in 100-year flood event and has brought with it a cost-effective approach which has saved us nearly a million pounds. ■

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Project Team: Environment Agency, Interserve, Halcrow, Arup



PROFILE

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Chris Williams

Title:
NCF2 Framework Manager

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Interserve

Tim Cobb, Project Manager, ncpms, Environment Agency:

“The Environment Agency consulted extensively with the community about their aspirations for the scheme and designed a sensitive solution to minimise impact. Careful design, planning and communications by the project team have ensured that the works have been carried out efficiently and with minimal disruption. This has left a delighted client and satisfied stakeholders.”





IMPROVING PUMP STATION EFFICIENCY

We have a target to reduce our carbon footprint by 33 per cent by 2015. Pumping operations account for a third of our overall energy use, with flood defence pumping stations representing around fifty per cent of this. With roughly 370 flood defence pumping stations in England and Wales, small improvements in energy consumption at each site will add up to substantial energy savings.

Atkins and the Environment Agency MEICA team have developed a new pump efficiency calculator to improve the efficiency of new or replacement pumps we install.

Each pumping station has a unique layout, equipment and operating system. Similarly, local operators and managers have practical experience and knowledge of the performance history of individual sites, which is vital to make improvements.

By entering the existing physical and operational site data into the spreadsheet (which provides generic data where specific site details are not available), the user can change key variables and see the impact on the pumping station performance and efficiency, displayed in terms of energy usage. This means many different variables can be compared live during discussions without the need to carry out long and time consuming calculations.

The results will be saved as records for the stations, and can be quickly accessed in the future to support decisions on how the pumps are operated.

The tool is available within the Environment Agency from Asite. It has proven to be very successful for identifying areas for improvement, comparing alternative proposals and as a working tool in negotiations with asset management teams.

Key facts

A workshop has been held recently in Birmingham where our framework partners including practitioners from Halcrow, Atkins, Arup and Jacksons could feedback their experiences of how this new tool was being used and to consider further opportunities for development. The feedback was positive allowing Atkins to further refine the tool. A point to note is that it is just as important not to over specify as to under specify the required capacity of the pump so its maximum efficiency can be optimised.

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Originally designed for flood defence pumping stations, we are now expanding the tool to be used for borehole pumps. Defra has expressed an interest in further work which may lead to wider use of the tool. ■

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Team: Environment Agency, Atkins



PROFILE

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Title:
Senior Engineer and
Mechanical, Electrical and
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**Keith Solts, FCRM
Manager MEICA,**

Environment Agency:

“We have already used the tool on a number of sites and, on one specific application, have seen that we can achieve a 35% carbon saving (7.7 tonnes a year) in a refurbishment scheme in North West region. This will lead to operational savings of £1700 a year.”

SPOTLIGHT ON....

PATHFINDER PROJECTS

We have launched a series of pathfinder projects. These are designed to allow us to test a series of different project approaches in a systematic manner.

The main method we are trialling is Design & Build, which we are using on eight projects. Although our contract is with the main contractor, generally a NEECA consultant is working with them on the design.

Other methods being trialled are:

- Cost led procurement where ncps sets the target cost rather than the supplier
- Contractor led design where the contractor uses their own resources rather than bringing in consultant support
- PSC Option A for PAR preparation (lump sum)
- Outcome focused scope
- Project Bank Account
- Project Insurance where all traditional 'all risks', public and product liability and professional indemnity policies throughout the supply chain are covered by an all encompassing policy.
- Packaging small reconditioning projects (RECON)

Project Managers involved in these trials are expected to provide feedback on a regular basis – twice per year and to write a brief report at the end of the project to capture the main learning points.

If you think that your project may be suitable as a pathfinder, please contact your BTM, CSM or David Pilkington to discuss what to do next.

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EAST ANGLIA RECONDITIONING SCHEME

Jackson is working in partnership with Birse on over 100 work packages as part of the Anglia Reconditioning Scheme. This is a scheme to refurbish and repair some of the Environment Agency's assets in East Anglia. The majority of work involves repairs to flood defences including embankments, footpaths and sluice gates.

We currently have teams working on projects all over East Anglia. For example, at Shotley, a team is working to rebuild a culvert that collapsed last year. They are removing and replacing the outfall pipe, constructing a new headwall and installing a penstock and flap valve so that the salt marsh behind the sea wall can drain effectively. Access has been quite a challenge so the team decided to use 'dura-base' boards and lay a 1km access track (in just four days) which will protect the land from damage, and can be easily removed at the end of the job.

Similarly, in Aldeburgh, the team have reinstated the concrete revetments which have been damaged over the years by the tides. This job has been particularly tricky because access to the site is quite difficult, and the sea wall is only 1m wide at the crest. This ruled out the use of standard plant for lifting. Instead, the team have erected a scaffold which extends the width of the wall to give a wider working platform, and using a spider crane to pick up the revetment blocks, reinstate the clay bank beneath and then re-lay the defence.

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PROFILE

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Jackson Civil Engineering





SELSMORE MARINE WALK

The Selsmore Marine Walk was a Pathfinder project for our Design and Build Pathfinder Scheme. It involved placing 3,000 tonnes of rock revetment in Chichester Harbour. The SSSI site was next to a winter bird roosting area and work had to be completed by 5 December 2011 to avoid any disturbance. Other challenges included minimising disruption to the public who enter the narrow site through a private residential road.

A close working relationship between the three parties: Balfour Beatty Regional Civil Engineering (Dean and Dyball), Environment Agency and Halcrow meant that the construction-led detailed design and procurement was highly efficient, allowing them to meet a very tight construction programme. When a stakeholder asked for an alternative option, the project team successfully responded with no impact on completing the project or the quality of the final scheme.

Not only was the contract completed ahead of schedule and below budget but we received a letter of appreciation from the residents' association, commending the project team for the successful completion of the works.

We fed back lessons learned at Selsmore to the Pathfinder team. Both the local residents and the team benefited from pre-contract meetings which we held to tell the public about the proposed works. Also, keeping the customer updated on progress and issues made for an open and trusting relationship.

Making good use of favourable weather and tide conditions and working when conditions allowed helped. By talking to our supplier every day about our delivery needs, we could make best use of the limited space available and plan our progress. It also allowed them to plan their resources, and kept deliveries to a minimum causing less disruption to local residents. Similarly, making an extra effort to keep the site and access road clean and tidy gave a good impression and pleased the locals.

Team: Environment Agency, Halcrow, Balfour Beatty (Dean & Dyball)

Email: Mel.wallace@bbrcel.co.uk

PROFILE

Name:
Mel Wallace

Title: Site Manager

Organisation:
Balfour Beatty

"Pathfinder projects allow us to test a series of different project approaches."

WASH EAST COASTAL MANAGEMENT STRATEGY

The Wash East strategy follows on from the Shoreline Management Plan (SMP2) which set out a long-term sustainable plan for Hunstanton Cliffs to Wolferton Creek. A key element of the project has been to link up with the 2010 Pathfinder project that investigated options for local contributions. The Pathfinder project had a strong engagement element, and as a result the Wash East project decided to turn all stakeholder workshops into joint events. Moving forward, we have included lessons we learnt from the Pathfinder project in the engagement approach, including how to make a success of events on limited budgets. This makes sure that the stakeholders see that all authorities are communicating together and toward the same objectives.

Team: Royal Haskoning, Environment Agency

Email: p.lawton@royalhaskoning.com

PROFILE

Name:
Pippa Lawton

Title:
Coastal Scientist

Organisation:
Royal Haskoning



PULTENEY WEIR INNOVATION

Pulteney Weir radial gate is a key flood control structure next to the famous horseshoe weir in the centre of Bath - a World Heritage Site. Since 1972 it has operated automatically from the upstream water level during floods. In 2010 Jacobs were appointed to investigate ways of closing the gate channel for maintenance or in emergency. This gave an opportunity to improve safe access and led to some innovative ideas.

We originally designed the gate channel to be closed for maintenance using vertical piles from a crane. At first we didn't consider the need for emergency closure, until a tree became trapped under the gate on a receding flood, wedging the gate open. If it had remained open this would have lowered the upstream water level, causing bank instability, water quality and navigation issues. Fortunately a second flood pulse freed the tree, but it highlighted the need for emergency closure.

Jacobs investigated a range of engineering solutions. These focussed on something safe to install and operate, and identified the key problem as needing to block a 3m deep channel carrying fast flowing water. Additionally, crane access was limited by a restrictive road tunnel.

Lack of reliable drawings and records meant the team had to investigate the existing structure including silt removal, non-destructive testing and confined space entry.

We decided to use the existing structure but provide an auxiliary way of lifting/lowering the gate that would not place non-design stresses on the gate frame. This was important as nearby Twerton Radial Gate needed welding repairs after the mode of operation there was changed.

The solution we chose provides automated control to the float chamber inlet/outlet valves and a power supply for submersible pumps that would simulate a flood condition and allow us to control the gate opening. In addition, we are installing improved telemetry to provide early warning of a blockage or other failure.

Historically, we accessed the weir island by temporary ladder, so we also took the opportunity to provide permanent steps and low-level lighting for the maintenance team to use in all conditions.

We've employed a number of specialist contractors and sub-contractors on the scheme, managed by the area team with Jacobs providing project and programme management skills and CDMC services.

By adapting the existing structure as far as possible, the project has saved an estimated £750,000, generated minimal waste and provided a significant life extension for the gate, as well as improving safety for the operations delivery team. ■

Email: phil.garvey@jacobs.com

Project Team: Environment Agency, Jacobs

Key facts

- £750k estimated savings
- Safer future operation
- No environmental impact
- Enhanced serviceability of flood defence
- Low-cost mid-life upgrade for 40-year old asset



PROFILE

Name:
Phil Garvey

Title:
Senior Rivers & Coastal
Engineer

Organisation:
Jacobs





PASSIVE DESIGN AT BANBURY

The main feature of the Banbury flood alleviation scheme is an on-line flood storage reservoir, set largely within the natural floodplain of the River Cherwell, upstream of the town. The flood storage reservoir can hold back up to about three million cubic metres of water during a 1 in 200 year flood (an area of 1 square km, an average 3m deep). Innovative double-baffle orifices were used to throttle the flows.

We formed the flood storage area using a 2.9km long embankment, up to about 4.5m high, with two structures (one on each branch of the River Cherwell) to control the flows passing downstream through the town. Specially-shaped fixed orifices control the flows, which means that discharge remains virtually unchanged, even as the reservoir fills up and the head across the control structure increases. The flow control structures each have twin double-baffle orifices to allow throttled flows to go down river, together with two 30m long spillways, which come into operation when the reservoir is full.

We chose and developed the passive flow control devices to meet our objectives to avoid using gates, relying on power supplies or automating or manning the site during floods.

Our design has an almost uniform flow of about 9 m³/s per opening over a head range of about 2.5–4.5m above the crest of the Crump weir. This range of heads takes in 90 per cent of the available storage capacity in the reservoir. We confirmed the design through physical model testing at HR Wallingford. The key feature of the orifice design is the angled lip on the downstream baffle that causes a more severe contraction and hence less discharge when it controls the flow at higher heads, as illustrated in the diagrams.

Although similar baffled orifice devices have been used for flow control in irrigation schemes for many years, we believe that their selection and development for the Banbury scheme was a 'first' in the UK.

With no need for operator intervention, power supply or moving parts, the Banbury flood alleviation scheme will achieve reliable performance combined with reduced operating costs. An

excellent showcase for passive design, the Banbury scheme demonstrates benefits an innovative approach to flow control can bring. By adopting a passive design on this high-profile project the insights it yields will be of value to teams across the NEECA framework. The scheme is currently under construction and when completed will leave a simple and uncomplicated operational and maintenance legacy. ■

Email: ackersj@bv.com

Project Team: Environment Agency, Black & Veatch, Galliford Try, EC Harris

Key facts

- Flow control is achieved by using a passive design, with no operator intervention, power supply or moving parts.
- Flows passed downriver are controlled to about 38m³/s (within a range of $\pm 10\%$).
- The peak of the Easter 1998 flood measured at Banbury gauging station was about 90m³/s, corresponding to a return period of about 100 years.
- The peak flood passed through Banbury will be attenuated by between about 50% and 60% for floods with return periods of 50 to 200 years.
- The scheme includes spillways with an aggregate discharge capacity of about 400m³/s.



PROFILE

Name:
John Ackers

Title:
Technical Director

Organisation:
Black & Veatch (All Reservoirs Panel Engineer under the Reservoirs Act 1975)

ACHIEVING SUITABLE ENVIRONMENTAL FLOWS

Under the Water Framework Directive, there are objectives for water bodies to achieve Good Ecological Status or Potential. In order to reach this status, the hydromorphology needs to support the ecology.

In some systems, the flow regime does not support the ecology needed. In these instances, we have successfully used the Hydro-Ecological Flow Threshold (HEFT) methodology to understand flow requirements for the ecology.

The tool provides quantitative recommendations for the minimum environmental flows needed to support a healthy and sustainable river ecosystem. We use site-specific flow and physical habitat data gathered from targeted field work coupled with information on the flow habitat needs for the species of interest to assess whether the flow regime of a river is supporting the ecology.

Where it is not supporting the ecology, we use HEFT to understand the flow regime needed.

We have developed and refined this tool with the Environment Agency and used it on over 30 rivers from upland becks in Cumbria to lowland chalk streams in southern England. The approach has been acknowledged nationally by winning several awards for technical excellence and innovation. ▣

Email: andy.gill@atkinsglobal.com

Project Team: Environment Agency, Atkins



PROFILE

Name:
Andy Gill

Title:
Senior Hydrologist

Organisation:
Atkins



MEDMERRY HABITAT PROTECTION

We've begun work on new sea defences at Medmerry which will also create new wildlife habitat and new access for local communities and visitors.

After consulting widely, we decided on a managed realignment scheme. We will build new defences inland from the coast, allowing a new intertidal area to form in front of these new defences. Work started in October 2011 and is due to finish in spring 2013. These will offer 1000 times better flood protection than the existing defences

Community support

We've been working with representatives from a wide range of local organisations, such as parish councils, residents groups and access groups, throughout the development of the scheme. They have helped to design aspects of the scheme and kept local communities and other stakeholders well-informed.

Protecting habitats and wildlife

Important and protected wetland wildlife habitats are being lost because of flood defence works around the Solent, and we need to replace them. Medmerry will compensate for some of those losses.

We are also working hard to safeguard the rare wildlife that is already in the area, such as water voles, great crested newts and reptiles, during and after the work.

The realignment covers an area larger than 300 football pitches. We will maintain the existing sea defences until the scheme is complete in spring 2013, when we will breach them. The Environment Agency will then look after the new flood defences and our aim is that the RSPB will manage the habitats and access. ▣

Email: colin.maplesden@environment-agency.gov.uk

Project Team: Environment Agency, Team Van Oord, Jacobs, EC Harris

Key facts

- A new flood bank
- Big rock boulders to protect the bank where it reaches the sea
- Sluices in the banks to let freshwater from inland drain out to sea
- A new freshwater diversion channel at Earnley
- Footpaths, cyclepaths and bridleways
- Four viewpoints

STRATEGIC FISH PASS PRIORITISATION

Thanks to an innovative project team, we can now focus our resources on sites that will have the greatest benefit for fish passage. The project team has developed a regional model that prioritises fish and eel passage improvements using existing and readily available data. This new model means we can spend our funds wisely and will help to achieve Water Framework Directive (WFD) targets.

We developed this innovative model to assess and rate individual barrier sites. The model appraises the number of WFD failures within catchments, lengths of river habitat connected, the porosity of barriers (that is, how difficult passage is at present), BAP species present and any opportunities for hydromorphological improvement. The team made sure that the weightings and subsequent rating system produced a consistent and fair assessment across the region.

The model was specifically designed to incorporate readily available or easily gathered information and uses established Environment Agency GIS datasets. This means we can manage the model as a 'live' planning tool into the future, adding new sites for assessment and updating it to account for the impact of any improvement work.

We made site visits to assess barrier porosity and to identify options for viable fish and eel passes. We also noted potential constraints at each site (including environmental, buildability, access and health and safety issues). This meant that we identified any high-level constraints on future schemes at an early stage.

The study sites included several of our gauging weirs. Because of this we found a number of cost-effective options that will allow fish and eel passage without significantly affecting flow gauging accuracy.

The team initially applied the regional model to 60 high priority barriers on rivers in Yorkshire and North East with good results. The model provides a clear indication of the high priority sites in the region, with the top sites consistently ranking highly through a full range of sensitivity tests. By considering indicative scheme costs we could also find the best value sites, and opportunities for third party contributions.

We are now using the prioritisation model to identify, plan and carry out environmental improvements and to meet WFD targets in the North East. The model can readily be used to guide similar

investment throughout England and Wales. We are also working to re-use the model throughout the North West and an adapted version in part of South West region. ■

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Project Team: Environment Agency, Black & Veatch

Steve Chambers, Principal Officer, Fisheries, Environment Agency: "Black & Veatch have recently completed the development of a fish pass prioritisation model and assessment of our priority obstructions within Yorkshire and North East Region. We are very pleased with not just the work that they have done which meets all the criteria we set out, but also with the way in which they engaged with Agency staff which was both positive and helpful. Overall we are highly satisfied with all aspects of the work they have done with us and we would certainly consider using them in future work."



PROFILE

Name:

Mike Redding

Title:

Senior Engineer

Organisation:

Black & Veatch

Key facts

- GPS tracking devices were successfully trialled by the project team and enabled the location and safety of staff undertaking site inspections to be monitored online in real time.
- A flexible approach was adopted in the model and it is designed to be suitable for use in any Environment Agency region.
- There are an estimated 1500 man-made barriers to fish movement on watercourses in North East England alone.





LOCAL PROCUREMENT ON THE UPPER MOLE

We are working with the local community to develop the Upper Mole Flood Alleviation Scheme. The scheme involves constructing new or raised dams at three sites in the Crawley area to reduce flooding to the town and Gatwick Airport. Throughout the process we tried to complement the benefit of national expertise by employing local suppliers to support the government's localism agenda and bring benefits to the local economy.

We completed Tilgate Dam in 2011, and Worth Farm and Clay's Lake are due to be constructed in 2012 and 2013. Local suppliers we used included:

- Crawley Borough Council's (CBC) regular tree contractor at Tilgate carried out tree felling before construction began.
- CBC parks team will manage the woodland management and future planting.
- The existing land manager at Worth Farm did the tree felling and will be planting and installing dormouse boxes.
- A local Sussex dormouse group will monitor and maintain the dormouse boxes.

This local approach has many benefits. It helps to get buy-in from local people, generating positive support for the scheme and making them feel that they have an input to a project of national importance. We can also reduce costs and save resources. CBC were able to use the waste wood chippings from the tree felling to surface paths in the park, also reducing the volume of waste from the site.

The use of local suppliers has also reduced transport costs and therefore carbon emissions. This can often save the project money. We also found that it can bring new opportunities for contributions. By

working closely with CBC they volunteered to take on the construction of a river restoration scheme as a contribution to the project.

When using local suppliers we need to adhere to appropriate health and safety standards, as with all Environment Agency projects. We found that the project CDM Co-ordinator was best placed to advise on the most pragmatic approach, to meet safety requirements proportionate to the scale of the work.

To get the best out of the arrangement, it's best to work with the supplier to make sure that they fully understand the project and our objectives. This does not normally cost the project much and any cost tends to be outweighed by the benefits of using the supplier.

A key benefit is that this approach retains money within local economies, supporting localism and empowering communities to become involved in project work. However, you will need a transparent procurement process when using non-standard suppliers. Involve your commercial lead at an early stage to help find the best way forward. ■

Email: sarah.jennings@jacobs.com

Project Team: Environment Agency, Jacobs, Morrison, Arcadis

Local resident: "I have been following your progress with interest since you started the project and I have been interested enough to ask questions of your staff who have been very helpful and informative. It's nice to see that they are keeping disruption to a minimum and clearing roads of mud promptly."



PROFILE

Name:
Sarah Jennings

Title:
Principal Environmental Scientist

Organisation:
Jacobs

NEAS CAPTURING VALUE SEMINAR:

INCORPORATING SUSTAINABLE OUTCOMES INTO FLOOD RISK PROJECTS

When managing flood risk, we must always look for the most sustainable solution possible, with the widest possible benefits for people, their communities and for natural resources.

In December, the National Environmental Assessment Service (NEAS) staged the 4th annual Capturing Value seminar. The aim of the seminar was to explore with supply chain partners how innovative and sustainable results can be achieved through the Agency's Capital programme. Held at the Arup Campus in Solihull, the seminar brought together over 120 external consultants, contractors and staff from NEAS, ncps, the sustainable communities team and Procurement.

David Wilkes, the President of CIWEM, gave the keynote speech, setting the scene and the future challenges for the Agency and its suppliers. The joint presentations between NEAS and suppliers during the day demonstrated creative case studies from across England and Wales, each one linked to a key aspect of sustainability. Several studies highlighted opportunities for re-using excavated spoil on site. By doing this, we have been able to reduce the amount of waste going to landfill, avoided the need for material to be brought onto site and reduced lorry movements. It has saved the Agency significant amounts of money, led to more creative results and creation of new wildlife habitats on site.

NEAS were delighted to be joined by Clive Chatters, the Conservation Manager from the Hampshire and Isle of Wight Wildlife Trust, who gave a stimulating and provocative presentation on the challenges of managing coastal wildlife reserves in the Solent in the face of changing sea levels. It is clear that we need to work more closely with the Wildlife Trusts and other 'Third Sector' organisations to understand their way of doing things and explore where they may be applied to the Agency's capital projects.

A key message from the day was that developing sustainable solutions is the true challenge for engineers and environmental professionals alike and will be essential to managing flood risk in the future. ■

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Project Team: Environment Agency



PROFILE

Name:

Phil Griffiths

Title:

NEAS Commercial Manager

Organisation:

Environment Agency

**David Wilkes,
President of CIWEM:**

“Thank you for one of the most informative and useful conferences I have attended for a long time. Much to inspire and much to think about!”





COLLABORATION AT DIDSBUY BASIN

A combination of land use and topographical constraints prevented Didsbury Flood Storage Basin from filling to its full storage capacity, which had implications for both flood risk and reservoir safety. Our project team worked together to find a solution with minimum impact on the local environment and existing site users, achieving value savings of over £1m.

We use the 62ha basin in south Manchester to manage peak flows in the River Mersey. However, it was not adequately protecting the surrounding infrastructure and properties. Earlier work found that a new culvert and channel could relieve the main bottleneck to flow through the basin. This had serious implications for the well-used allotments and other sport and leisure facilities in the area, attracting strong local opposition.

Arup and the Environment Agency worked closely to find an alternative solution, considering the local community needs and existing land uses. It also needed to meet our safety requirements and those set by the All Reservoir Panel Engineer.

The All Reservoirs Panel Engineer set a December 2011 deadline to solve these issues. The final scheme design temporarily relaxes the maximum permitted water level in part of the basin during filling, with flood walls and a flood gate to protect nearby properties. We've designed new walls using materials sympathetic to their setting in a local conservation area. A new outfall allows the basin to handle repeat flood events better, with easier access to maintain other assets within the basin. These improvements are much more acceptable to the local community and environment, whilst being more cost-effective to build and operate.

Engaging the community posed a particular challenge. We wanted users of the basin and nearby residents to understand why the improvements were necessary and to minimise the impact the work had on the area. We responded to close scrutiny from the local press, council officials and the MP by opening lines of communication and consulting frequently with all stakeholders. We held a public 'drop in' event at an early stage to introduce the scheme. Then discussions with local stakeholders and the local planning authority during

Key facts

- Flood basin capacity restored to 100%
- Planning permission achieved with no objections
- No impact on allotments or public open space
- >£1m of value savings by not using a channel



project development and a regular newsletter helped to keep everyone informed of progress.

This considerate solution now allows us to safely operate the basin to its full capacity. The scheme had a minimal impact on the local environment and site users and is sympathetic to the local landscape. By consulting the public as we developed the scheme we overcame significant public concern for their valued local environment. This alternative solution achieved value savings of greater than £1m. □

Email: jane.collins@arup.com

Project Team: Environment Agency, Arup, Morrison Construction



PROFILE

Name:
Jane Collins

Title:
Associate

Organisation:
Arup

Local resident and allotment plot holder:

"The Environment Agency and their professional team did a thorough and effective job in resolving the complex issues involved."

STAKEHOLDER ENGAGEMENT AT POWICK

The Powick Flood Alleviation scheme is a small project located to the south of Worcester. The scheme faced significant challenges which the team combated through innovative thinking, collaboration and stakeholder engagement.

There were a large number of stakeholders and funders involved in the project. The scheme budget was set before the PAR and funding was provided by the RFDC, Worcestershire County Council, the Parish Council and the Local Flood Action Group. Good communication was essential.

The location also posed a challenge. A major road bisected the village constraining the flood defences, resulting in it crossing the path of several major services. The works were also located on common land, with a complex statutory approvals process.

We used various engagement tools during the development of the scheme to keep stakeholders informed. It was essential to consult with internal stakeholders and budget holders early on to identify possible solutions and risks with each of the options. We presented these to key internal stakeholders using simple visual materials to explain issues relating to ground conditions, the need to win local material, and the requirement to reduce the freeboard of the scheme.

We engaged with the local Parish Council, flood action group and local commons committee at regular intervals throughout the appraisal and design stage. We included issues that the commons committee identified in the design. Also, by communicating with utility providers, they were able to carry out gas main replacement work and electrical overhead cable maintenance work in conjunction with the flood defence works. During the consenting process, specialists within the Environment Agency dealt with selective issues. This made sure that the consenting authority did not accept legal and heritage challenges to the approvals.

During construction, we maintained engagement with the local community by using the local parish council website to tell local residents about potential road closures. In addition, we produced a bi-weekly construction update and displayed it on the four Parish information boards located around the village. Throughout construction, the contractors maintained an open-door policy allowing engagement with the community.

The scheme has been completed on budget despite the number of consultees and consents required. The methods we used to explain and define risks to key internal stakeholders allowed the scheme to progress.

The team received an unusual thank you message via the Environment Agency's Facebook page. We received a great deal of positive feedback throughout the project but the comment on Facebook was the icing on the cake. The extra effort

Key facts

- During the commons consenting process over 50 private individuals required to be consulted.
- The approval of the commons consent provided useful precedent for future work on common land.
- Delivering the project for a fixed budget ensured that the team evaluated key risks throughout all stages of the scheme.

the team put into public liaison certainly paid off, and they should be proud of such public praise, which portrayed both the Environment Agency and the team as a whole, in such a positive light. ■

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Project Team: Environment Agency, Royal Haskoning, Jackson Civil Engineering

Sherry Gorman-Pickard, resident (Facebook comment): "A big thank you to a wonderful team for putting in the flood defences in Powick. It was lovely to meet some of you at the opening yesterday. You are all such a great group of people and your professionalism, care and friendliness runs through the whole process from the guy keeping the roads clean up to the lovely lady designer!"



PROFILE

Name:
Chris Fosbeary

Title:
Principal Engineer

Organisation:
Royal Haskoning



PROFILE

Name:
Craig Savidge

Title:
Site Agent

Organisation:
Jackson Civil Engineering



HEALTH AND SAFETY WEEK 2011

In October 2011, employers, unions, safety reps and regulators across Europe took part in the European Health and Safety Week. It aimed to raise awareness and promote health and safety as part of a larger ongoing campaign. For the ncpms community where general awareness is already good, it provided an opportunity to take stock and promote good habits for the coming year.

The theme continued the 2010 'Campaign on Safe Maintenance' - a very relevant concern to ncpms where plant-related issues have been prominent in recent incidents. Maintaining management systems and of individual competency is just as important. For this reason we decided to focus on key areas of plant, place, people, process and product.

On a range of sites around the country we used these themes to review arrangements, celebrate and share good practice and plan for the coming year. Events ranged from site/project specific to those organised with suppliers such as 3M.

For the first time we also began to think about how we can share framework experience with the wider Environment Agency. In 2012, with the formation of a single Environment Agency Construction group, this will be increasingly important.

Maintaining and improving our safety performance in difficult financial times will be a greater challenge than ever before. The HSE's (provisional) fatal accident statistics for 2010/11 show 171 killed at work over the period, an increase of 16 per cent. The ncpms is not immune

to the pressure to reduce costs without compromising safety. However the European Safety Week has shown we have the people and the appetite to deliver. ■

Email:

peter.turner@environment-agency.gov.uk



PROFILE

Name:

Peter Turner

Title:

Health and Safety Business Partner

Organisation:

Environment Agency

GIVE A DAY SUCCESS

Framework supplier, Galliford Try, let their staff use a day of their annual leave on 24 November to build a sustainable woodland path for a local primary school.

The charity event was generously supported by Galliford Try's supply chain, specifically Derryard Construction who donated the materials for the path.

The team of 14 made up of operatives, foremen, engineers and office staff also used the day as a team building event. As part of the Environment Agency's framework community health and safety week initiative, the team members reversed their roles. This saw the regional framework manager on the end of a wheel barrow while the labour and admin team organised everything.

With dry conditions and a hearty breakfast aiding the eager workforce they completed the path in good time and left a very pleased Head Teacher with a short woodland walk that had been on the school's to do list for a number of years. ■



Email: Brian.Mackay@gallifordtry.co.uk

THE KEY TO CARBON MANAGEMENT

Using funding from our internal carbon reduction fund, we have developed a leading construction carbon calculator. This has gained worldwide recognition as an innovative tool for considering a wider range of activities and decisions made during the lifecycle of a project. It includes impacts on the environment and not just simply those elements covered by Site Waste Management Plans, such as timber, waste and aggregates.



Nottingham Left Bank

Our target is to reduce carbon emissions between PAR stage and construction completion by 10 per cent. On the projects where we have used the Carbon Calculator, decisions made during the course of the project reduced emissions by 12.2 per cent in 2010/11. However, on projects due to be completed by March 2012 only 50 per cent of our projects are going to achieve the target reduction of 10 per cent. The annualised total carbon emissions for 2010/11 are equivalent to 55 per cent of the annual emissions from other sources within the Environment Agency. This includes car usage, train usage and buildings so we need to look for every opportunity to reduce it more.

One of our biggest consumers of carbon is from traditionally made concrete. There is a project underway to promote the use of low carbon concrete on most projects and this should help. However, we have to consider carbon use throughout the lifecycle of a project and this can create challenging decisions around cost versus carbon emission, when we have cost reduction targets to contend with. Project teams need to be looking at all options to reduce carbon emissions. Where this will bring about other challenges such as a cost increase, refer the decision to the Project Board or on to the Programme Board, if necessary, for further consideration. If we can meet these challenges we will be able to achieve our goal of being true carbon leaders in the construction industry. ■

Email: karen.alford@environment-agency.gov.uk



PROFILE

Name:
Karen Alford

Title:
National Programme and
Project Support Manager

Organisation:
Environment Agency

Dr Paul Leinster, CEO of the Environment Agency: "The Chairman, Board, myself and Directors are committed to leading by example. We've set ourselves tough targets to reduce our energy use and our carbon dioxide emissions."

TECHNOLOGY TRIUMPH AT RADCOT

We have successfully completed a £2.2million weir replacement scheme on the River Thames at Radcot whilst working alongside otters.

We installed a 'Bushnell' PIR motion activated camera at a key activity site 50 metres downstream of the weir to monitor the impact on otters. We knew that the site was well used by otters so worked to keep disturbance to a minimum. This approach clearly paid off as photos and videos show at least 4 otters present throughout the construction work, even during periods when piling was being carried out in the day. ■

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Team: Environment Agency, Halcrow, Jackson Civil Engineering, EC Harris.



NEWS

HULL BARRIER REPAIRS COMPLETE

Jackson Civil Engineering has completed repairs to the iconic Hull Tidal Barrier on behalf of the Environment Agency. Used an average of five times per year to protect the city from tidal surges, the barrier needed to be re-glazed to bring it up to standard.

Working with Jackson's sister company SEH BAC, the team had to replace 88 two metre-long window mullions which hold the glass in place. These had become corroded over time. Although the process of replacing the mullions was quite straightforward, the Barrier is over 35m high so the job required a great deal of scaffolding. As well as working at height, the team also had to take into account the risks of working over a river. They adapted their health and safety strategy to keep everyone safe.

The team completed the job at the end of November and have now started to remove the extensive scaffolding. ▣

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EC HARRIS JOINS THE ARCADIS GROUP

In November 2011 two of the appointed National Cost Management Framework (NCFM) suppliers EC Harris and ARCADIS merged.

Through this merger, the combined resource of the two organisations grew to 19,000 individuals, thereby becoming a top five global leader in strategic built asset advice and project services delivery. Under the NCFM both EC Harris and Arcadis operate across all regions and this merger brings a strengthened and more focused approach to developing solutions for the Environment Agency. By aligning the strengths of both organisations under a single Group we have a unique opportunity to move a step forward in meeting the future objectives of the Environment Agency.

The two organisations will continue to offer resource capability and expertise separately to individual requests for service support but will, where appropriate and advantageous to the Agency, combine knowledge for strategic support offerings. ▣

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SITE MANAGER OF THE YEAR AWARDED

Jackson Site Agent Tom Mills scooped the 'Site Manager of the Year' Award at the CECA Annual Dinner.

At 28, Tom is Jackson's youngest Site Manager, and has been working for the past two years on the Nottingham Left Bank flood defence scheme.

Tom has been responsible for the Attenborough section of this 22Km scheme, which runs through a SSSI and residential areas. Despite numerous challenges, the site team led by Tom overcame public objection, technical challenges and environmental constraints to deliver a highly successful scheme which not only exceeded the clients' expectations but also set a benchmark in innovation. As Site Manager, Tom's technical ability, motivation and approachable personality created a team ambitious to achieve excellence. ▣



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ARUP

ATKINS

Birse
Civils

BLACK & VEATCH
Building a world of difference

Halcrow

JACOBS

Westminster
Dredging

in partnership with
Environment
Agency

Jackson

Interserve

Morrison
Construction

ROYAL HASKONING

TEAM
Van Oord

Turner & Townsend

DEAN DYBALL
ARCADIS

EC HARRIS
BUILT ASSET
CONSULTANCY