



AT JN BENTLEY, WHEN WE CARE ABOUT  
WHAT WE ARE DOING, WE DO IT BETTER.

# CARE.

WHEN WE CARE FOR OUR PEOPLE THEY  
ARE HAPPY.

WHEN WE TAKE CARE IN OUR WORK WE  
STAY SAFE.

WHEN WE CARE ABOUT THE BOTTOM  
LINE WE MAKE SOME MONEY.

WE INTRODUCED THE CONCEPT OF CARE IN  
2016, AND WILL USE IT MORE AND MORE  
AROUND THE BUSINESS IN 2017.

## INSIDE:

3	MANAGING DIRECTOR'S VIEW
4	FINANCIAL REVIEW
6	2016 IN NUMBERS
8	HIGHLIGHTS
10	PART OF THE MOTT MACDONALD GROUP
12	OPERATIONS
32	HEALTH, SAFETY AND THE ENVIRONMENT
36	PEOPLE
40	COMMUNITY
43	LOOKING AHEAD

# MANAGING DIRECTOR'S VIEW.

**IT HAS BEEN A REAL PLEASURE TO BE MANAGING DIRECTOR OF THE COMPANY THIS YEAR. I BELIEVE THAT THE BUSINESS HAS REALLY GROWN INTO ITSELF OVER THE LAST TWELVE MONTHS.**

In general terms, the money has looked after itself (our accountants and quantity surveyors tell me it's down to them but I'm reserving judgment) and we have found real professional pride in how we do things, especially in safety.

People in the main seem happy, which is always important, and our clients continue to like what we do, especially when we do it at our best.

We have had one or two challenging starts to frameworks but you get that when you are growing. The most important thing is to learn and to improve, and in doing we become.

The new team in Wales – made up of lots of new people located in a brand new operational region – will continue to face challenges as they get established, but if we make sure we begin with the end in mind and improve as we move through the second, third, fourth and fifth schemes, then we won't go far wrong.

Any new team could do worse than look at JBA Bentley for an example of how learning by doing will lead to improvement. The first couple of years for the joint venture were challenging, which made it all the more pleasing to see us go top of the Environment Agency's KPIs for the first time in 2016. The legacy of leadership that started the framework is not to be underestimated.

It was great to see our framework of security works in the North West cross the finish line in 2016, only getting there because the team coupled hard work with real resilience.

Visiting site over the past twelve months it's been notable to see how much people care about what they are doing. When our people care, we see a strong safety culture emerge, a culture that was particular evident at Rivelin Water Treatment Works when I paid site a visit.

The team's safety culture was exemplary. There was togetherness; site was well signed; briefings were good; housekeeping was correct; and site activities were planned and set up properly.

It is because of all these things – things that the team had done – that meant when a crane failed on site we are sat here now talking about a serious incident, not a serious injury.

We've welcomed more people than ever into the business in 2016 and now employ more than 1,000 people for the first time in our history. I am really pleased with the way the existing team has welcomed our new starters, this is a really important facet of a successful business.

It is just as important to wish our leavers well. Naturally people will leave the business but embracing the change when this happens will make us better. What has been notable in 2016 has been the number of people returning to JN Bentley after time working elsewhere. This is a wonderful dynamic to have because returning employees bring new experiences, added diversity and fresh viewpoints that can only serve to enhance our teams.

There is no greater pleasure than seeing our people develop and thrive, and we have seen plenty of examples of this in 2016. The business is doing well which means we will continue to create opportunities to 'get on' in all roles. We've got a number of people set for progression through our resources development schemes next year as we create more gangers and foremen from within.

I must mention Mott MacDonald. 2016 saw the relationship continue to mature as we see more and more examples of collaboration with the wider Mott MacDonald Group.

The energy sector and our increasing workload with National Grid is one area in

particular where we have started to benefit from existing relationships forged by Mott MacDonald. The more we talk to our colleagues in Mott MacDonald the more we can help each other. We'll use Yammer more in 2017 to help achieve this.

Construction and engineering has always been a team game and whilst we've always had that in spirit, in recent years we've become much better organised with it. Our team culture is getting stronger and stronger and this is what will ensure we continue to meet the needs of our valued clients in 2017 and beyond.

Please enjoy the 2016 Annual Review and be proud of all of your achievements.

**Paul**

Paul Bentley | Managing Director

**WHEN OUR  
PEOPLE CARE,  
WE SEE A  
STRONG SAFETY  
CULTURE  
EMERGE.**

# FINANCIAL REVIEW.

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## **2016 HAS BEEN ANOTHER YEAR OF TREMENDOUS GROWTH FOR THE BUSINESS THROUGH YEAR TWO OF OUR AMP6 WATER CONTRACTS AND THE MATURING OF OUR FRAMEWORK ARRANGEMENT WITH THE ENVIRONMENT AGENCY.**

Forecast revenue for the year is c. £169m, an increase of around 26% v 2015, with the weekly trend towards the end of the year running at an annualised rate over £200m.

Building on that level into 2017 sees us target further record growth with a budget of £224m (34% up on this year) of which over 80% is already secured. This is a stronger position than the equivalent last year and we believe we are well placed - with a few further key additions - to continue to deliver this unprecedented expansion.

## **OUR BALANCE SHEET REMAINS STRONG, ASSISTED BY POSITIVE CASH FLOW NOW THAT THE AMP6 SCHEMES ARE UP AND RUNNING.**

The vast majority of our work this year remains in the water and wastewater sector, but with the increased work from the Environment Agency via our JBA Bentley joint venture we are seeing a growth in the environmental sector. The company continues to review its strategy to determine whether there are opportunities for further expansion and diversification.

In order to deliver this growth our team has expanded with over 1,000 people employed by JN Bentley at the end of the year. The addition of so many new faces has seen us fill out the Durham office following the second floor refit towards the end of 2015, and increase our presence in both Newport at the Dŵr Cymru Welsh Water offices, and Peterborough with Anglian Water.

Our balance sheet remains strong, assisted by positive cash flow now that the AMP6 schemes are up and running. We have continued the investment in our infrastructure with 30 new and replacement excavators and the rolling replacement and expansion of our van fleet to meet the increased demand from activity levels. There is an even larger renewal programme planned for 2017.

2016 has also seen the first phase of the Bentley Xpedeon roll out, which will replace our core IT systems. The finance and payroll systems were migrated in the first quarter and have already delivered processing efficiencies. We look forward to phase two which integrates procurement, plant management and e-invoicing from January 2017.

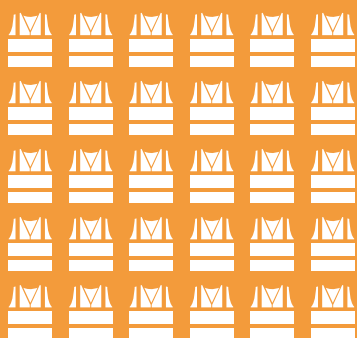
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# 2016

## IN NUMBERS.



WE REACHED THE MILESTONE OF 1,000 EMPLOYEES FOR THE VERY FIRST TIME



OVER £1M AND 17,600 HOURS WERE INVESTED IN TRAINING AND DEVELOPING OUR PEOPLE



OUR VISION FOR HEALTH AND SAFETY IS TO ACHIEVE ZERO INJURIES

SKILLS  
TIME  
EXPERTISE



£97K (PLUS HOURS OF SKILLS AND EXPERTISE) WAS DONATED TO GOOD CAUSES NATIONWIDE



WE SCOOPED 15 INDUSTRY AND CLIENT AWARD WINS, COMMENDATIONS AND SHORTLISTINGS



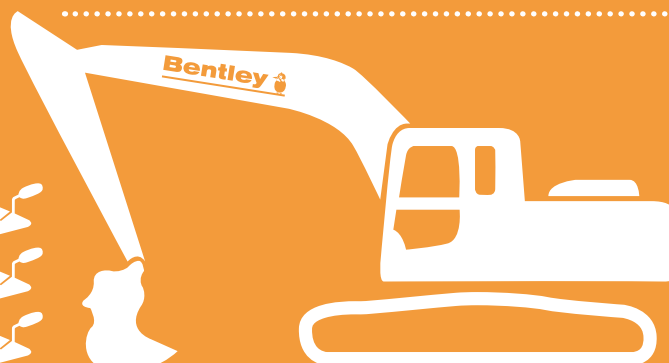
23 GRADUATES JOINED OUR TEAM IN A VARIETY OF DIFFERENT ROLES



EMPLOYEES PLACED 7,100 VOTES IN OUR INTERNAL RECOGNITION PROGRAMME, BE RECOGNISED



13 CONSTRUCTION APPRENTICES CONTINUED TO LEARN THEIR SKILLS WITH US



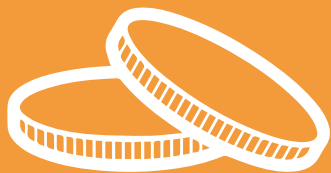
WE CONTINUED TO INVEST IN OUR 'GREEN' FLEET, PURCHASING 3 NEW ELECTRIC DUMPERS AND 2 ELECTRIC EXCAVATORS



FOUR WELLBEING PRIZE  
DRAWS MADE WINNERS OF 271  
EMPLOYEES



OVER 15,000 ORDERS WERE  
PLACED BY OUR IN-HOUSE  
PROCUREMENT TEAMS



6,600+

6,600+ COMMERCIAL INCIDENTS AND EXAMPLES  
OF BEST PRACTICE WERE RECORDED, YIELDING  
VALUABLE COST AND EFFICIENCY INFORMATION  
TO SHARE ACROSS THE BUSINESS

100

OVER 100 LIVE  
CONSTRUCTION SITES RUN  
AT ANY ONE TIME



## JANUARY.



Every single JN Bentley employee – plus colleagues from Mott MacDonald, representatives from our key clients, subcontractors and guests – attend our company seminar at one of three locations across the UK.

The day is themed around safety, people and money – the three core elements of our business.

## FEBRUARY.



Our people are widely praised for the assistance they give our clients and their customers, the emergency services and the British Army during unprecedented levels of flooding through the winter.

Environment Agency Director David Dangerfield, said, "Thank you for supporting out of hours arrangements over the holiday period ... everyone responded magnificently."

## MARCH.



We begin the roll-out of a bespoke state-of-the-art IT system that will revolutionise the way we work.

The successor to our award-winning CMS, Bentley Xpedeon is an app-based system that will run everything we do, from materials requisitions to incident reporting. It is tablet and smartphone-compatible so our teams on site can work more efficiently.

## JULY.



JBA Bentley is a joint venture between JN Bentley and Jeremy Benn Associates – specialists in water and environmental consultancy.

The team has enjoyed a successful year, picking up a team achievement commendation in the Institution of Civil Engineers' East Midlands Awards and receiving a framework contract extension.

## AUGUST.



The Dŵr Cymru Welsh Water Capital Delivery Alliance and Anglian Water's @one Alliance are both awarded prestigious Gold Awards at the Royal Society for the Prevention of Accidents (RoSPA) Occupational Health and Safety Awards.

MMB is playing a key role on both frameworks, helping to drive real improvements in the management of health and safety.

## SEPTEMBER.



Our operational areas join forces to raise funds for Macmillan Cancer Support, taking part in the 'World's Biggest Coffee Morning'.

Over the course of the year our people donated over £97,500 to good causes, raising money in a whole host of different ways, from running marathons to climbing mountains and organising bake sales to skydiving.



## APRIL.



We attend the launch of a new standard promoting a more consistent approach to carbon management in infrastructure.

PAS 2080 was developed by the Construction Leadership Council's Green Construction Board. As a member of the Green Construction Board's Infrastructure Working Group, we played a key role in the development of the new standard.

## MAY.



The Duke of Edinburgh visits our site at Grafham near Peterborough to officially open a £28m state-of-the-art storage reservoir and pumping station we have constructed with Anglian Water.

The new facility stores 40 million litres of treated water to secure supplies for more than one million homes and businesses in the area.

## JUNE.



Our engineers work with the Engineering Development Trust to run the Engineering Education Scheme, tasking students with a 'real-life' engineering problem.

Mr Britain of Highfields School, Wolverhampton, said, "The students have had a real insight into engineering ... they are all grateful for the opportunity MMB has helped to give them."

## OCTOBER.



Training our people is vital in ensuring they have the skills and knowledge to safely deliver high-quality work for our clients.

Many of the courses have a practical element, one example being our confined spaces training. The course utilises a specialist mobile training unit, meaning we can deliver the sessions at our own ConstructionSkills-accredited training centres.

## NOVEMBER.



We are appointed to design and construct a new sludge treatment centre at Five Fords Wastewater Treatment Works in Wrexham.

The facility forms part of the proposed Five Fords Energy Park which will create a site that maximises renewable energy generation from wastewater treatment works. Valued at £28m, this is one of the largest schemes that we have ever delivered.

## DECEMBER.



The business is in the midst of an exciting period of growth, and in December surpasses 1,000 employees for the very first time in its history.

To continue to meet the needs of our clients, in 2017 we must work hard to get our new colleagues up to speed with our culture – having happy people, looking after the money, and keeping people safe.

# Part of the Mott MacDonald Group

JN Bentley is part of the Mott MacDonald group, a global engineering, management and development consultancy.

This brings benefits for JN Bentley as we go through a period of significant growth and supports Mott MacDonald's business strategy, with customer focus at its heart.



James Harris - now heading Mott MacDonald's business across the UK, Europe and Africa - is well versed in the ways of JN Bentley having been heavily involved in our successful MMB joint venture since its formation in 1999.

Here James reflects on the past twelve months in JN Bentley.

2016 saw JN Bentley settle into its new ownership model and start to really support and influence the wider Mott MacDonald Group.

The broader business now understands just what knowledge and expertise colleagues in JN Bentley can offer. This was demonstrated nowhere better than the work of Graeme Carruthers and Ashley Parker, who spent time supporting Mott MacDonald colleagues on a scheme at the Kusile power station in South Africa, one of the largest power stations in the world.

2016 holds a number of other highlights for me. The progress the teams in both Wales and the Anglia regions have made in the last twelve months has been outstanding – both effectively from a standing start.

We now have a staff numbering upward of 100 working on the @one Alliance with Anglian Water, and last year delivered over £35m of work with Dŵr Cymru Welsh Water. The quality of service being delivered by the team is great; what we are doing there feels like a repeat of the strong foundations we laid with long-term client Yorkshire Water over 15 years ago.

It has been excellent to see JN Bentley's focus on wellbeing lead the way in 2016. The way key issues relevant to the workforce are being tackled is intellectually thought-out and has real benefits for staff and customers alike.

The company seminars were a real highlight; it was a privilege to close each of the three days on behalf of Paul and the opportunity to meet so many JN Bentley colleagues was something I personally really valued.

Mott MacDonald launched a new vision in 2016 - to be the world's leading employee-owned consultancy, opening opportunities with connected thinking to deliver optimum solutions and sustainable outcomes for our clients. JN Bentley fits with this new future; JN Bentley is a fantastic example of where great performance underpins client relationships, borne out in the amount of repeat business that comes the company's way and advancing Mott MacDonald's client-focused approach.

As we move into 2017 and beyond, the future looks exciting. Opportunities for JN Bentley staff will only broaden with chances for further career development with added responsibility.

We will embrace new technologies in an industry that is changing fast. We will also begin to explore new sectors and markets, developing relationships already established by Mott MacDonald.

Any growth, however, must be sustainable. The senior team will always protect and enhance what is making our business so successful: first class safety, service and quality delivered by great people.





# OPERATIONS.

## AT THE CORE OF OUR BUSINESS REMAINS THE DELIVERY OF FIRST CLASS PROJECTS FOR OUR CLIENTS.

**PEOPLE AND DELIVERY** | Central to the delivery of first class projects is our talented operational team, underpinned by dedicated support functions.

2016 saw these teams grow and grow in number with new starters joining the business and, pleasingly, through an increase in opportunities for existing employees, with skilled operatives progressing to become gangers and engineers progressing to become site agents, as well as other well-deserved moves across all areas.

Direct delivery is something that sets us apart from much of our competition and upskilling our people helps with this model.

Through the year we have looked at how we can bring work in-house, using the skills of our teams to their full potential. We will continue with this approach into the future as we believe it:

- Yields work of a higher quality – our people take real pride in what they do.
- Makes us more efficient – we already have the right resources in place and can react to the needs of our clients.
- Enables us to set the right culture and standards - employees understand the business and are aware of the standards we demand, especially when it comes to safety.

That said, we still value our extended supply chain. Direct delivery is important but we can't do everything ourselves and we absolutely value subcontractors' specialist skills for tasks outside of our core competencies. It is all about finding the right balance.

We have again presented awards to our leading suppliers and it is pleasing to see some of them nominated for recognition through our 'Be Recognised' awards during the year.



# SUPPORT.

Working in a fast-paced environment to meet the requirements of our operational colleagues, the support team provides a raft of services to keep our ever-demanding business running.

**Everything from accounting to training and procurement to recruitment, is administered in-house.**

As well as investing in development opportunities for the operational side of the business, we want to develop our support team too. Colleagues are studying towards qualifications part-time in the likes of procurement, HR and accounting – alongside their day jobs.

2016 saw the beginning of the implementation of our new bespoke IT system. Tablet and smartphone-based, ideal for our users out on site, Bentley Xpedeon utilises the latest technology and is making our operations more efficient.

Implementation will be complete in 2017, although development will be on-going as the new system is upgraded and updated to suit the needs of its users.

**ACCOUNTING AND FINANCE.  
COMMUNICATIONS & CR.  
ENGINEERING.  
HUMAN RESOURCES.  
IT AND DATA ANALYSIS.  
LABOUR RESOURCING.  
PLANT.  
PROCUREMENT.  
QUALITY, ENVIRONMENT & SAFETY.  
RECRUITMENT.  
SUBCONTRACT BUYING.  
TRAINING.**

**SAFETY** | Regardless of growth, geographical diversification and increasingly challenging times for our clients, we will always care about safety, care about each other, and believe that we can get to zero injuries.

In 2016 we saw people in our teams correct and report more hazards than ever before, looking out for each other to drive us towards zero. Our RIDDOR performance has been maintained well ahead of the industry average and significantly better than recognised benchmarks.

Through the year we have seen prolonged periods without any injuries across our operations and this tells us that zero really is achievable – if we can manage a week, why not a month and then why not a year?

We have set ourselves incredibly high standards and maintaining these takes effort and care from us all. On those rare occasions when we let our standards slip or fail to fully comply with our procedures and policies we have seen incidents occur and our challenge for the future is to approach everything we do with belief, energy and enthusiasm.

During 2017 we intend to re-launch our Health and Safety Strategy to provide a fresh impetus on our journey to zero, with a strong focus on leadership, teamwork, and care.

**COST AND EFFICIENCY** | Our Cost and Efficiency Strategy maintained its momentum in 2016, promoting a culture where our people are passionate about driving efficiencies, recognising waste and reducing costs.

We saw more commercial incidents reported and more examples of best practice shared last year than ever before. A programme of continued training has helped to keep us focused on efficient delivery. The latter part of 2016 saw our Cost and Efficiency Strategy relaunched and this will reach all staff in early 2017.

**DURING TIMES OF GROWTH WE MUST  
FOCUS ON THE THINGS THAT ARE  
IMPORTANT TO US: BY UPSKILLING OUR  
PEOPLE, RE-FOCUSING OUR COST AND  
EFFICIENCY EFFORTS, AND IMPROVING  
OUR SAFETY STRATEGY WE ARE DOING  
JUST THAT.**



# ANGLIAN WATER.

MMB is a member of Anglian Water's AMP6 Integrated Main Works Capital @one Alliance, one of six partners delivering a five year work stream. We are working closely with the @one Alliance to build a high performing team, a team that grew in-excess of 100 in 2016.

We continue to explore options for remote working, from locations including our Cambridge office, and have led the way with utilising the bespoke Alliance Safety Management System on site at Lowestoft, providing extensive feedback to enhance development of this system.



## ▲ ROYAL SEAL OF APPROVAL.

In Cambridgeshire one of the largest schemes that we have ever delivered received the Royal seal of approval from His Royal Highness the Duke of Edinburgh.

The royal visit marked 50 years since Prince Philip officially opened Grafham Water Treatment Works, which serves over one million people in towns including Northampton, Huntingdon, Bedford and Milton Keynes. Our scheme – which includes the construction of a new 40ML storage reservoir, new pumping station, pipelines, and

inline package booster pumping stations – at 15 sites across the region – provides added resilience to the water supply.

Our team was widely praised for their efforts in preparing for the Royal Visit, and received words of thanks from Buckingham Palace:

“Thank you ... His Royal Highness is well aware of the amount of planning that must go into organising such a successful visit, especially when incorporated into the working day of such a busy organisation.”

**PROJECT:** Grafham Resilience / **LOCATION:** Huntingdon, Cambridgeshire / **VALUE:** £28m





## ▲ ADDING EXTRA RESILIENCE.

Lowestoft Sewage Treatment Works was struggling to meet final effluent standards as it was hydraulically overloaded.

As part of the @one Alliance team, we helped to develop a cost-effective solution to this problem that also provides our client's operational team with a more robust works and gives them added flexibility in how they operate the plant.

A new final settlement tank was constructed utilising precast concrete panels weighing seven tonnes each, positioned using a 260T crawler crane. This helped to expedite the construction programme.

**PROJECT:** Lowestoft Water Recycling Centre

**LOCATION:** Suffolk

**VALUE:** £4.4m



## REPEAT WORK DRIVES IMPROVEMENT.

A new sludge cake reception facility at Kings Lynn allows the import of cake from other sites for processing. Working collaboratively with our fellow framework partners as part of the @one Alliance, we constructed a covered building with bunker and transfer conveyors, two buffer silos, transfer pumps, odour control and other elements of electrical instrumentation, control and automation.

This is the third such plant the team has constructed since the beginning of AMP6, which has enabled us to take learning from one scheme to the next.

The team overcame challenging conditions on site, working safely around existing buried services and complying with strict planning constraints. To keep the plant operational during our works, temporary works were deployed whilst replacing a large storage tank.

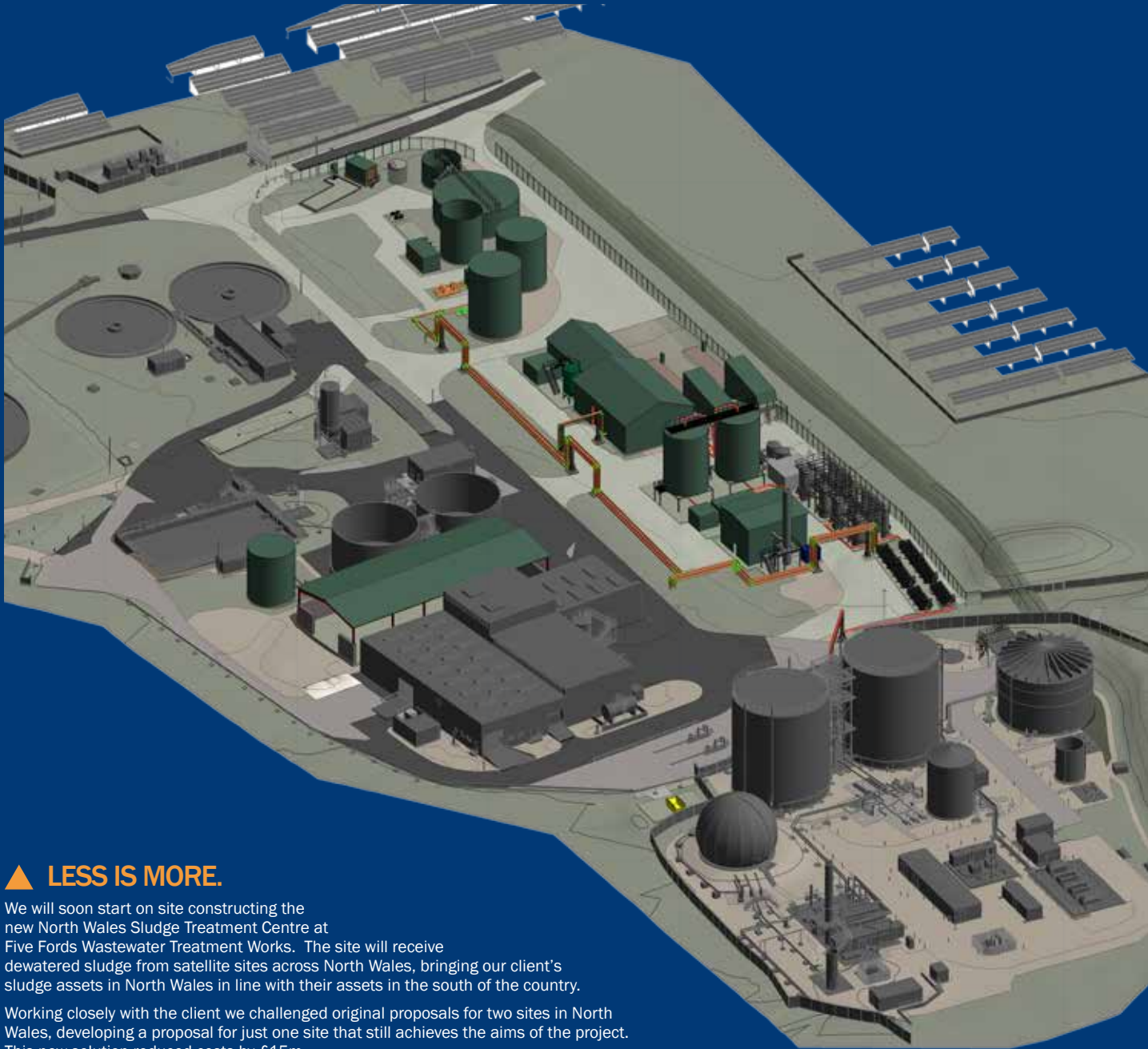
**PROJECT:** Kings Lynn Cake Import

**LOCATION:** Norfolk

**VALUE:** £4.8m

# DŴR CYMRU WELSH WATER.

MMB is one of six Capital Delivery Partners (CDPs) tasked with delivering Dŵr Cymru Welsh Water's AMP6 Capital Programmes. In 2016, the second year of the framework, the Alliance matured as programme and turnover in the region increased significantly on year one. We also secured a contract to design and construct a new sludge treatment centre – one of the largest schemes we have ever delivered.



## ▲ LESS IS MORE.

We will soon start on site constructing the new North Wales Sludge Treatment Centre at Five Fords Wastewater Treatment Works. The site will receive dewatered sludge from satellite sites across North Wales, bringing our client's sludge assets in North Wales in line with their assets in the south of the country.

Working closely with the client we challenged original proposals for two sites in North Wales, developing a proposal for just one site that still achieves the aims of the project. This new solution reduced costs by £15m.

Dŵr Cymru Welsh Water will be able to return bio-gas produced by the new facility to the grid through an existing plant on site, providing them with an income into the future.

**PROJECT:** Five Fords / **LOCATION:** Wrexham, North Wales / **VALUE:** £28m





## THE NEAR MISS REPORTING FREQUENCY RATE ON SITE IS IN-EXCESS OF 2,000.

THIS MEANS OVER 2,000 POSITIVE INTERVENTIONS ARE MADE FOR EVERY 100,000 HOURS WORKED. A THIRD OF THESE ARE MADE BY OUR SUBCONTRACTORS, WHICH FOLLOWS OUR ASPIRATIONS FOR SHARED REPORTING AND INVOLVEMENT FROM EVERYONE.

## A FIRST-CLASS CULTURE ACROSS THE WHOLE TEAM.

To improve performance of the wastewater treatment works at Chester, we're upgrading the site, replacing the HV transformers, MCC and up to 3000l/s of pumping capacity, constructing a new 28m dia. primary settlement tank, refurbishing an historic inlet building, and constructing a new poly dosing plant to feed a new sludge centrifuge.

The whole team has worked together to plan and co-ordinate the works, particularly important as we had to keep the plant fully operational whilst replacing equipment on site. This team ethic has followed through into the project's safety culture; there is particularly good involvement from the supply chain, especially when it comes to making positive interventions on site.

**PROJECT:** Chester Wastewater Treatment Works

**LOCATION:** North West England

**VALUE:** £5.5m

## REDUCING THE SCOPE TO MAXIMISE EFFICIENCIES.

Both Hook and Johnston Wastewater Treatment Works required upgrading to cater for population growth in the area. To achieve this we designed and built a new sewage works to replace the works at Hook, and a 5.5km rising main to replace the works at Johnston.

With the sites only a few miles apart, we devised a solution that eradicated the need to build two new treatment works by directing flows from the Johnston site into the new works at Hook.

We're now driving further efficiencies by maximising the use of off-site fabrication and specifying standard products for many of the process items.

**PROJECT:** Hook and Johnston Wastewater Treatment Works

**LOCATION:** Haverfordwest, Pembrokeshire

**VALUE:** £8m

## RESILIENCE TO COPE WITH FUTURE GROWTH.

To improve resilience for future population growth we're upgrading the treatment works at Newport Nash, which includes the construction of a 33m-dia. settlement tank.

This involves the installation of 50 five-tonne precast concrete sections. We're directly-delivering this element of the works, applying lessons learnt from recent schemes to do so safely and efficiently.

We're also delivering a second project at Newport, constructing a bypass to guard against equipment failure. Our team challenged the original scope, suggesting a modification of existing equipment (rather than the construction of new) to reduce costs by £900,000.

**PROJECT:** Newport Nash and Growth Schemes

**LOCATION:** South Wales

**VALUE:** £4.4m

## EMBRACING BIM.

The first project delivered under MMB's new AMP6 framework with Dŵr Cymru Welsh Water, we adopted new state-of-the-art software and followed the principles of Building Information Modelling (BIM) to design and build a new wastewater treatment plant at Llanpumsaint in West Wales.

Working collaboratively, we produced a comprehensive centralised Revit 3D model hosting 24 different detailed design drawings.

The 3D model allowed technical staff to inspect the plans, operational staff to walk through their future works, and the communications team to engage positively with the local community. It also allowed the site team to 'pre-build' the project safely in their minds before starting construction.

**PROJECT:** Llanpumsaint Wastewater Treatment Works Upgrade

**LOCATION:** West Wales

**VALUE:** £1.8m



# ENVIRONMENT AGENCY.

2016 was another busy and successful year in the Water and Environmental Management (WEM) framework working with the Environment Agency (EA). This started in earnest straight after the well documented storms over the festive period of 2015; JBA Bentley has been engaged in the renewal programme ever since. The geographical area we cover is ever-increasing and our office in Peterborough is now fully occupied, which delivers the award-winning Asset Recovery Programme of Works (ARPW) for the Lincolnshire and Northamptonshire regions.

## CRITICAL FLOOD DEFENCE WORKS.

A significant number of our schemes involve working with clients such as the EA to implement preventative measures to guard against issues such as flooding. This was the case at Goole, where concerns were raised about the stability of the channel bank and foreshore of the Dutch River.

A tidal surge in early December 2013 caused widespread disruption along the East Coast, with many properties flooded and extensive erosion of coastal areas. The surge entered the Humber and associated rivers, filling the River Ouse and then entering the Dutch River.

The Dutch River itself is narrow and constrains flows, resulting in a large tidal range with high velocities. Having identified the unstable banking on this stretch of river, JBA Bentley was engaged by the EA to deliver a three-phase scheme to reduce the risk of flooding to surrounding areas and properties at times of high tides.

The solution has seen us construct a permanent flood defence using a combination of sheet and continuous flight auger (CFA) piling, steel tendons and rock armour to reinforce the embankment.

Over £1m was invested in the temporary works at Chantry Cottages, including 25,000 tonnes of stone used for ramps and piling platforms, some of which has since been reused on other schemes. These temporary works were crucial in enabling the permanent works to be delivered safely.

**PROJECT:** Chantry Cottages / **LOCATION:** Goole, Humberside / **VALUE:** £6.3m



## WORKS IN THE HEART OF THE COMMUNITY.

The historic market town of Ulverston in Cumbria has a history of flooding, causing disruption and misery for the proprietors of over 500 residential and commercial properties.

To significantly reduce flood risk, the EA, Cumbria County Council, Network Rail, South Lakeland District Council and United Utilities have all partnered to deliver the Ulverston Town Beck Flood Alleviation Scheme.

Town Beck lies within a steep catchment; the watercourse is mainly run underground through a culvert beneath Ulverston town centre. We have managed a significant increase in scope since the scheme began, with our construction works now including new raised flood defences along the open channel sections of Town Beck and a new flood storage area to contain flows in storm conditions. We've also replaced, repaired and refurbished underground culverts, cladding new structures with locally-sourced stone.

Working literally on the doorstep of properties, customer engagement has been vital. The project has its own website and blog, the team has hosted drop-in sessions, information boards are displayed in the town hall, and 'contact us' cards have been distributed.

The completed works will improve the standard of flood defence to a 1% Annual Exceedance Probability (AEP) - a flood event with an average recurrence interval of once every 100 years.

**PROJECT:** Ulverston Town Beck Flood Alleviation Scheme / **LOCATION:** Cumbria / **VALUE:** £6m

## WORK FROM A STANDING-START REWARDED.

In 2016, the EA awarded us a one-year extension to our Asset Repair Programme of Works (ARPW), taking it through to October 2018.

The extension is reward for the hard work and dedication of the teams involved in the framework since its inception in October 2014. They have developed great relationships with the client, delivering safe, efficient and sustainable solutions across a large geographical area.



An award-winning team - see p8-9.

The ARPW is largely focused on improving the condition of flood defences that protect properties, critical infrastructure and prime agricultural land from both fluvial and tidal flooding.

Both teamwork and leadership have been essential to the successful delivery of a challenging programme. Key too has been the streamlining and pooling of construction activities and resources, driving a reduction in costs, delivery duration and carbon footprint.

**PROJECT:** ARPW

**LOCATION:** Yorks and North Anglian Region

**VALUE:** £20m+ over three years

THE ULVERSTON PROJECT INCORPORATES SIGNIFICANT TEMPORARY WORKS TO ENABLE OUR WORKFORCE TO WORK SAFELY WITHIN THE WATERCOURSE, INCLUDING FLUMING AND OVER-PUMPING.



## HIGH PROFILE FLOOD DEFENCES.

Built in 1987 in response to severe flooding five years earlier, the Foss Barrier forms an important part of the flood defences of York. A gate can be closed to prevent rising waters in the River Ouse from backing up into the River Foss and flooding parts of the city.



In December 2015 floods hit York once again, with waters rising into the electrical switch room for the incoming mains supply, rendering it inoperable.

After significant involvement in the emergency response to the floods (see p30-31), we were then engaged by the EA to deliver permanent upgrade works on site.

At the core of these works is an upgrade to the Foss Barrier Pumping Station where we are increasing the capacity of the pumping station through the installation of eight new pumps and associated MEICA equipment. Each pump weighs 6.5 tonnes and is capable of pumping 6m<sup>3</sup>/second.

The upgraded equipment will be housed within an extension to the existing building that will lift all critical equipment above the flood zone. To facilitate this, all equipment has been temporarily located on a purpose built platform.

**PROJECT:** Foss Barrier

**LOCATION:** York, North Yorkshire

**VALUE:** £8m



# NORTHUMBRIAN WATER.

Our well established relationship with Northumbrian Water dates back to 2001 when we made our first foray into the North East. 2016 saw the first full year of delivery under our new AMP6 contract, with MMB one of five successful partners carrying out water and wastewater schemes across the region. In early 2017 we intend to move to new co-located offices at Seaham with our client and fellow contract partners.

## MAINTAINING SERVICE FOR OUR CLIENT.

At the primary effluent pumping (PEP) station at Howdon we installed a 5.5t isolation valve and eight Rotork valves as part of an essential upgrade to the site.

It was crucial that site continued to operate as usual during the refurbishment. To achieve this, during working hours all flows into the sewage treatment works were diverted via a temporary over-pumping system, all 2000m of which was off loaded and installed in less than four weeks.

Once the over pumping was installed and a trial run complete, the works in the PEPs building was able to commence. Safe working was ensured by working around the weather forecast: some shifts started at 5am and others ran late into the night.

The temporary over pumping system improved process readings that significantly that we are now working with our client to make this element of the works permanent.

**PROJECT:** Howdon Primary Effluent Pumping Station / **LOCATION:** Tyne and Wear, North East England / **VALUE:** £2.65m



## COLLABORATIVE APPROACH LEADS TO REPEAT WORK.

In recent years we've delivered a number of different programmes of work with Northumbrian Water, including a series of works to upgrade security across their operational assets.

Working in a truly collaborative fully-integrated manner with Northumbrian Water, the asset database was broken down into batches so that the security improvement works could be delivered in the most efficient manner.

Key to the success of the programme has been taking the same team from one batch to the next and with it learning and improved knowledge: for instance, it used to take a day to install a security cover, now we install four security covers in one day. We have also trained our own site resources to install doors and cages. This helped us to over deliver on targets, completing 99 sites when only 86 had been initially planned.

Due to the success of the programme, the client is rolling out the same approach across future projects.

**PROJECT:** Water UK Security Works

**LOCATION:** North East England, Essex, and Suffolk

**VALUE:** £32.3m

### WATER UK - MEASURES OF SUCCESS:

**WINNER - COLLABORATION AND INTEGRATION AWARD - CONSTRUCTING EXCELLENCE NORTH EAST (CENE)**

**FINALIST - NATIONAL CONSTRUCTING EXCELLENCE AWARDS**

**FINALIST - PROGRAMME OF THE YEAR, TEAM OF THE YEAR AND HEALTH AND SAFETY EXCELLENCE - NORTHUMBRIAN WATER GROUP 'GEM' AWARDS**

**SHORTLISTED - PROJECT OF THE YEAR - CIVIL ENGINEERING CONTRACTORS ASSOCIATION (CECA) NORTH EAST AWARDS**





## WORKING IN SOME PICTURESQUE LOCATIONS.

Castle Eden Dene is located within a nature reserve marked as a Site of Special Scientific Interest (SSSI). We worked closely with the client and site owner Natural England for over 12 months to devise the best approach to constructing the new surface water sewer, supporting environmental surveys and an extensive customer engagement programme.



We also engaged with Northumbrian Water's operational teams to understand their access requirements and maintenance to the completed sewer. This enabled us to reduce the original scope and eradicate the need for an additional shaft, saving over £300,000 – more than 10% of the project value.

**PROJECT:** Castle Eden Dene Surface Water Outfall Replacement

**LOCATION:** County Durham

**VALUE:** £2.2m

## SAFE CONFINED SPACE WORKING.

Situated in the picturesque rolling hills of upper Teesdale, Grassholme Reservoir is one of the top 'any method' fisheries in the country.

On site we worked with Northumbrian Water to install a new hydroelectric turbine and upgrade the emergency drawdown pipe.

With the majority of the scheme situated within a 120m long, 5.2m dia. outlet service tunnel, safe confined space working was key to the project's success.

Due to this constrained working space, a self-erecting crane was used to feed materials in and out of the tunnel, before a temporary crane beam – capable of lifting up to one tonne – moved the material overhead once inside.

**PROJECT:** Grassholme Reservoir

**LOCATION:** County Durham

**VALUE:** £2m



# SEVERN TRENT WATER.

Through 2016 we continued to deliver a range of projects for Severn Trent Water. We delivered these projects from our base in Shifnal and now from offices in Burton upon Trent and Derby too, as we expand our geographical reach to cover more of the region.



## TEAMWORK THE ORDER OF THE DAY.

After the Drinking Water Inspectorate (DWI) challenged our client to complete a batch of dosing schemes much earlier than originally planned, our team collaborated with Severn Trent Water to hit their new targets.

15 months of design, construction and commissioning at Pool End in Leek – one of four schemes in the batch – brought the overall programme of works to a close ahead of schedule.

Works at Pool End involved a complete reconfiguration of the distribution network, new treatment plants for pH correction and disinfection, and the decommissioning of a redundant treatment plant.

Everyone involved received the highest of praise for their collaborative effort.

**PROJECT:** P04 Batch, incl. Pool End

**LOCATION:** Across Severn Trent Water region

**VALUE:** £3m

## ▲ EMBRACING OUR SURROUNDINGS.

The design and build of a new 5.5ML distribution service reservoir and 3.1km pipeline at Cowleigh sees us working in and around the popular spa town of Malvern, and in the Malvern Hills, an Area of Outstanding Natural Beauty (AONB). This has influenced a number of our decisions in the development of the project.

The design takes into account a natural fault line within the rock formation, and the route of the pipeline is designed to minimise our impact. Our choice of materials has also been influenced: not only does the use of Molecur plastic pipes reduce costs, it reduces the need for mechanical lifting and can be cut using a handsaw rather than power tools. This lessens our impact on our surroundings, and reduces safety risks.

We've been proactive with the community too, hosting a public exhibition prior to starting on site and engaging with local residents whilst laying the pipeline through the streets of Malvern, keeping them up-to-date with progress.

**PROJECT:** Cowleigh DSR and Pipeline

**LOCATION:** Malvern, Worcestershire

**VALUE:** £5.8m



## ▲ SAFELY MANAGING CONSTRAINED SITES.

We are regularly faced with constraints on site that mean we have to carefully work around existing assets. At Ludlow, where we hydraulically upgraded the sewage works, we reduced our construction footprint by 20% by installing a circular cofferdam. This worked in full cantilever and provided temporary ground support for an excavation down to 3.5m below existing levels.

At Coalport we decommissioned existing digesters and installed new dewatering facilities. We had to integrate new works with existing assets so our designers used modelling – both 3D BIM and physical – to decide on the final layout of site, including a requirement to maintain existing traffic routes during the construction phase.

**Both schemes utilised off-site manufacture with precast concrete wall units and troughs built in controlled factory conditions before being delivered and installed on site. This has benefits for safety and quality, especially when working on constrained sites.**

**PROJECT:** Ludlow Hydraulic Expansion & Coalport STC Digester Closure

**LOCATION:** Shropshire

**VALUE:** £2.7m & £3.2m

## EXCEEDING OUR YEAR ONE TARGETS.

Across the Severn Trent Water operating region we have been commissioned to install batches of UV plants – treatment rigs that use ultraviolet to treat water.

Factory built assembly (FBA) sees the UV plants utilise a standard design which is constructed and commissioned in controlled conditions, before they are delivered and installed on site. Using a standard design means that everyone involved is familiar with the product and that spare parts are easy to source. Constructing and commissioning off site improves safety, improves quality, and reduces construction time.

We have exploited the benefits of FBA in year one of the programme, working with a fellow contract partner to install eight units against the original target of six.

This over-achievement couldn't have been done without our dedicated workforce and efforts of the partners involved, including our client and the key suppliers, and by exploiting the benefits of collaborative planning with a fellow contract partner.

**PROJECT:** Groundwater UV Plants

**LOCATION:** Across Severn Trent Water region

**VALUE:** £9m

## ▲ WORKING IN SOME BEAUTIFUL PLACES.

We've always been lucky to work in some beautiful locations, none more so than our hydroelectric expansion scheme at Clywedog in Mid Wales.

Together with refurbishing two existing turbines within the dam, we installed a new 100kw Italian-manufactured turbine into the spillway to increase the energy generation and export capacity of the site.

Effective planning and co-ordination of site activities with our client and the supply chain was of the highest importance.

This included the co-ordination of many specialist subcontractors, who were proactively managed to ensure we delivered the project with zero harm.

You might recognise Clywedog Reservoir from an iconic Land Rover advert of the 1980s.

**PROJECT:** Clywedog Hydro

**LOCATION:** Llanidloes, Mid Wales

**VALUE:** £2.2m



# UNITED UTILITIES.

We are one of four Construction Delivery Partners working closely with United Utilities to deliver their AMP6 Capital Programme. We're undertaking the design and construction of projects across the North West at water and wastewater sites, working on both infrastructure and non-infrastructure schemes. 2016 saw us break ground on a number of significant projects, and substantially complete the safe construction and commissioning of a multi-million pound service reservoir on the outskirts of Manchester.

## FIRST OF A KIND.

A new 18ML capacity, twin compartment service reservoir built on the site of an existing 103 year old structure at Jacksons Edge has provided increased security to the water supply network. The new structure is the first precast concrete service reservoir that client United Utilities has ever built and the first that MMB has constructed and commissioned in two stages.

Situated in a leafy suburb on the outskirts of Manchester, close to residential properties and a number of leisure facilities, measures were taken to minimise the impact of our presence. This was one driver behind the adoption of a 'Design for Manufacture and Assembly' (DfMA) approach.

DfMA meant that much of the reservoir could be manufactured *off* site, reducing the length of time we needed to be *on* site. In total, 126 wall units, 132 beams, 120 columns and 400 roof slabs were precast in factory conditions away from site before being delivered and carefully crane-lifted into position.

DfMA also gave our client the lower whole life cost solution, saving approximately £2m on their original budget estimate for the scheme alone. It also had major benefits for safety and programme.

**PROJECT:** Jacksons Edge Service Reservoir / **LOCATION:** Disley, Manchester / **VALUE:** £8.4m





## REDUCING SPILLS INTO THE RIVER RIBBLE.

To comply with the requirements of the Shellfish Waters Directive, spills from the storm tanks to the River Ribble are limited to a maximum of 10 per year period from 2018 onwards.

In order to achieve this our team is designing a 50,000m<sup>3</sup> storage tank as well as improving the performance of a number of other assets within the treatment works.

The new storage will reduce the volume of sewage spilling into nearby rivers and ultimately into Morecambe Bay by the equivalent of 80 Olympic-sized swimming pools each year.

Working collaboratively with our client, we value engineered initial plans and reduced the capacity of storage by over 20% - yielding significant savings.

The storm tanks use the precast concrete 'Sealwall' system, which rapidly bolt together without a need for in-situ joints. This will deliver safety, time, cost and quality benefits when compared with traditional in-situ construction.

Together with constructing the new storm tank on site at Preston Wastewater Treatment Works, we are installing a 500m pipeline, upgrading the inlet works and carrying out maintenance to eight primary settlement tanks.

**PROJECT:** Preston Storm Tanks / **LOCATION:** Lancashire / **VALUE:** £13m

## BATHING WATER IMPROVEMENTS AT POPULAR SEASIDE TOWN.

As part of a major scheme to improve bathing water quality along the Fylde coastline, we are working with United Utilities to increase the capacity of the sewerage network and manage surface water by a new separation system, in order to reduce flows to Fleetwood Wastewater Treatment Works.

Included within the scope of our works at ten discrete locations across the town is the construction of a 4,000m<sup>3</sup> detention tank, new 4000 litres/s storm screen, new pumping stations, rising mains, 6000m of pipework and 20,000m<sup>3</sup> of attenuation basins which form part of a new Sustainable Drainage System (SuDS).

**PROJECT:** Blackpool South Water Management Scheme / **LOCATION:** Lancashire / **VALUE:** £22.5m



WITH OVER 1,700 PILE POSITIONS TO SET OUT AT PRESTON, THE TEAM DEVELOPED A SPECIAL PIN HOLDER TO REDUCE THE RISK OF INJURY WHEN SETTING OUT THE POSITIONS - THE INNOVATION HAS SINCE BEEN SHARED ACROSS THE BUSINESS.



## SECURITY WORKS DELIVERED SAFELY.

Working closely with our supply chain, across the UK we designed, installed and commissioned a range of electronic and physical measures to further secure their assets. The security enhancements bring these water company sites in line with new legislation.

2016 brought to a conclusion three years of security works across the North West. The quality of installation was described as "first class" and – with over 80,000 hours booked to the project by our people – an AFR of zero demonstrates a great safety culture amongst the team.

**PROJECT:** SEMD (Security and Emergency Measures Directive)

**LOCATION:** Various

# YORKSHIRE WATER.

Workload grew steadily through 2016, with 2017 promising to be our biggest year ever for Yorkshire Water. As a consequence our team grew in 2016, with internal promotions and new recruits joining the business. Safety continues to be a big focus as we worked with Yorkshire Water on the implementation of the eight areas of their Safety Improvement Plan. This has included a much sharper focus on Process Safety, bringing in learning from the nuclear and petrochemical industries and giving us the opportunity to respond to some new challenges.

## WINNING OVER THE PUBLIC.

Our team carrying out a project at Butterley Reservoir dealt with much scrutiny from the public and media in their delivery of refurbishments to a listed spillway, first built in 1906.

Initial objections were raised when our client announced plans to make safe the only Grade II listed Victorian spillway in the country. Popular with tourists, the spillway controls the flow of water from the reservoir, safely ensuring it does not overtop and damage or erode the embankment.

By using sympathetic design and construction methods and engaging with the local community, supporting local events and schools, the team has alleviated initial concerns and now, once complete, the improvements to the spillway will help maintain its legacy long into the future.

Local dignitaries, including Jason McCartney MP, praised the high standards on site and the communications and community engagement efforts were recognised at the prestigious Chartered Institute of Public Relations awards.

**PROJECT:** Butterley Spillway / **LOCATION:** Marsden, West Yorkshire / **VALUE:** £5m



## MANAGING A STEEP, RESTRICTED SITE.

The steep rolling hills that surround Stubden Impounding Reservoir presented us with a number of challenges when it came to safe access and the delivery of materials into the working area.

Tasked with making improvements to the reservoir's spillway, a 60m-radius tower crane was erected on deep concrete foundations cut into the steep hillside.

This approach meant that materials could be lifted in a much safer manner, and meant that efficiency improved because there was no need to mobilise a series of much smaller cranes and concrete pumps.

Whilst the crane was in situ, the West Yorkshire Fire and Rescue Service was invited to site to familiarise themselves with the layout should we have needed to call on their assistance. They used this time to carry out training for themselves, re-creating a variety of rescue scenarios in a 'real work' environment, something for which they were very grateful.

**PROJECT:** Stubden Spillway Improvements

**LOCATION:** Bradford, West Yorkshire

**VALUE:** £1.1m







## SAFE CONFINED SPACE WORKING.

Valve towers sit above outlet pipes and tunnels, housing the controls that draw-off water from different levels in a reservoir.

At Digley, our client needed to upgrade access to the 37m-deep valve tower to be able to safely inspect it for leaks, corrosion or damage. Our solution involved the installation of open mesh decking, hand-railing, ladders and gates, as well as modifications to support steelwork and painting existing metalwork.

Confined space working was the number one safety hazard on this scheme. To eradicate this altogether during the design phase, we used a laser scanner to produce a 3D scale model of the entire shaft. During construction, we engaged the supply chain and employed safety specialists to ensure we had full-time rescue provision on site.

On the back of this first scheme we are now investigating 43 further sites to which we will be able to take our learning from Digley to further improve our delivery.

**PROJECT:** Valve Tower Metalwork / **LOCATION:** Yorkshire / **VALUE:** £500,000

## MECHANICAL AND ELECTRICAL EXPERTISE.

Mechanical and electrical (M&E) engineering is an often overlooked yet absolutely integral part of our business. We employ a skilled team of M&E specialists who work across our operational regions.

At Normanton Wastewater Treatment Works, a full M&E upgrade of the aging equipment on site was required. Our team refurbished the primary settlement tanks, secondary filter distributors, humus settlement tanks and storm tanks, keeping the works fully-functional throughout by designing a temporary storm tank that mimicked

**PROJECT:** Normanton M&E Refurbishment / **LOCATION:** West Yorkshire / **VALUE:** £3.5m

## IMPROVING SUPPLY TO SOUTH YORKSHIRE.

At Rivelin Water Treatment Works we are constructing seven new clarifiers, three new rapid gravity filters, extending the washwater recovery facilities and replacing existing filter media as part of a large scheme set for completion in 2018.

The project will improve the water treatment process for to up to 250,000 Yorkshire Water customers in the Sheffield area.

110,000 tonnes of earth and stone were excavated to create room for the base for the new treatment building. The soil is currently stockpiled on site, ready for re-use later in the scheme. This material will be used to almost entirely bury the new clarifier building; this will minimise the visual impact on the surrounding Rivelin Valley, which lies adjacent to the Peak District National Park. To agree on this solution we engaged with the local community, including residents, councillors and members of the Rivelin Valley Conservation Group.

**PROJECT:** Rivelin Siroflec

**LOCATION:** Sheffield, South Yorkshire

**VALUE:** £24m



# DURHAM COUNTY COUNCIL.

## MAINTAINING OUR PRESENCE IN THE HIGHWAYS SECTOR.

JN Bentley has long maintained a presence in the highways sector, a presence we upheld in 2016 as part of Durham County Council's Civil Engineering Framework.



We delivered essential works to improve the layout of the road connecting Villa Real to Front Street, Leadgate, in County Durham. We constructed 520m of new and improved carriageway, complete with surface water drainage and pedestrian and cycle way, part of the popular Coast to Coast path.

The project also involved the safe demolition and removal of an old bridge, the cause of a bottleneck for road users prior to our works.

Complete in December 2016, local dignitaries including were on hand to open the scheme and complete the first journey on the new stretch of highway.

**PROJECT:** Villa Real Bridge Realignment

**LOCATION:** County Durham

**VALUE:** £1.3m

“JN BENTLEY’S ATTITUDE TO SITE ORGANISATION AND HEALTH AND SAFETY BUILT CONFIDENCE THAT WORK WOULD BE DELIVERED TO AN EXCELLENT STANDARD.

“FROM THE START JN BENTLEY’S STAFF WERE HAPPY TO WORK COLLABORATIVELY WITH THE AUTHORITY TO DELIVER A SUCCESSFUL PROJECT.”

JOHN GALL | SENIOR PROJECT MANAGER, DURHAM COUNTY COUNCIL



# NATIONAL GRID.

## A GROWING CLIENT FOR JN BENTLEY.

JN Bentley has been working with National Grid on the 'Gas Asset Health' framework since early 2014. The framework involves mechanical, electrical and civil engineering across National Grid's portfolio of UK assets, and evolved in 2016 to now include 'design and build' delivery.

We're delivering integrated projects with our colleagues at Mott MacDonald, including our largest National Grid project to date at Carnforth Compressor Station in the North West of England, and a package of telemetry replacement projects around the country.

**We have also recently been awarded a large batch of work to deliver the West area valve and civil package.**

At Alrewas Gas Compressor Station, where we carried out remedial works and inspections to critical valve and pipeline facilities, the team enjoyed unprecedented success in receiving two 100% audit scores.

**PROJECT:** National Grid Framework / **LOCATION:** UK / **VALUE:** £3m+

# THE COAL AUTHORITY.

JN Bentley is currently in its third consecutive framework with the Coal Authority, the first of which was awarded back in 2004.

The current 'Confluence' framework involves the design and construction of new mine water treatment schemes (MWTS) across the UK, required to reduce levels of contamination in the water at former coal and metal mine sites.



## ▲ BRAND NEW TREATMENT SCHEME.

Near Chester-le-Street in County Durham lies the site of the former Kimblesworth colliery.

Here we worked with the Coal Authority to construct a new treatment scheme consisting of an aeration cascade, two reed beds including inlet and outlet channels, interconnecting pipework, and landscaping.

The team utilised a GPS dozer, beating the earthworks programme by four weeks. Using GPS, the dozer takes position information, compares it with the design elevation and uses this to compute cut or fill to grade.

**PROJECT:** Kimblesworth MWTS

**LOCATION:** Chester-le-Street, County Durham

**VALUE:** £800,000

## REDUCING OUR ENVIRONMENTAL IMPACT.

In South Yorkshire we increased the capacity of an existing mine water treatment scheme by constructing two reed beds, each over 2200m<sup>2</sup> in size.

We always look to reuse existing material on site – this reduces costs and our burden on the environment.

At Trafford the team screened the excavated topsoil on site to remove tree roots, rubble and shale and transform it into a reusable material. This eliminated disposal costs and reduced the need for imported material, helping to drive a 10% reduction in cost for the overall scheme.

As part of the project we designed a new perfect manhole to take the place of a flow splitter chamber. The manhole is much easier for our client to maintain, and is something the Coal Authority is likely to adopt on future schemes, manufacturing the product off site to drive further efficiencies in construction.

Coal Authority Head of Environment, Tracey Davies, audited site and was impressed with the high standards of record keeping, tidiness and engagement and passion from the team.

**PROJECT:** Trafford MWTS / **LOCATION:** Barnsley, South Yorkshire / **VALUE:** £750,000

# PROVIDING A FAST RESPONSE FOR OUR CLIENTS.

WE PRIDE OURSELVES ON BEING ABLE TO REACT TO THE NEEDS OF OUR CLIENTS AT SHORT NOTICE, PROVIDING A FAST, EFFECTIVE AND SAFE RESPONSE.

THIS WAS PUT TO THE TEST AT THE TURN OF THE YEAR WHEN SEVERE FLOODS HIT LARGE SWATHES OF THE UK. 85 EMPLOYEES, PLUS NUMEROUS MEMBERS OF OUR TRUSTED SUPPLY CHAIN, GAVE UP THEIR TIME AT NO NOTICE TO SUPPORT OUR CLIENTS, THE EMERGENCY SERVICES AND EVEN THE BRITISH ARMY.





Photo credit: Nigel Holland

## TADCASTER.

Tadcaster was in the news when flood waters caused the bridge across the River Wharfe to collapse. Debris was washed down river, critically damaging a power station that supplied a sewage pumping station. Our teams remained on standby throughout January, supporting National Grid as they reinstated the power supply.

## KENDAL.

In Kendal we assisted our client in plugging pipework damaged by the floods. Just one day after being called out the team had assessed the damaged pipe, proposed a solution and successfully implemented it. We were praised for our rapid response, which was critical in protecting the treatment works.

## FOSS BARRIER.

At the Foss Barrier (pictured) we assisted our client to install sand bags and pump equipment, before installing a temporary access bridge and building a platform to support key assets on site. We're now constructing a multi-million pound permanent solution at Foss.

## MOOR MONKTON.

Permanent flood defences we had constructed around the perimeter of Moor Monkton Raw Water Pumping Station were put to the test when the River Ouse burst its banks but our workmanship withstood the barrage as the site continued to operate as normal, supplying three key water treatment works in Leeds, York, and Elvington.

## SELBY.

We constructed temporary flood defences ahead of high tide to protect the town of Selby from flood waters, remaining on site to maintain defences and man the pumps.

## CASTLE MILLS.

Flooding caused the loss of mains power supply to Castle Mills Pumping Station and caused serious damage to assets contained within. Our teams worked on site 24/7 to carry out critical works and make the pumping station fully operational again.

## NORTH EAST.

Our team provided 24/7 standby cover for our client for 14 weeks, responding to over 60 call-outs across the North East. Much of the works involved pumping flood waters, drying apparatus, reinstating power supplies and re-commissioning plant. Our response was praised by the client, who was impressed with the level of service.

## BRADFORD ESHOLT.

At Esholt we delivered emergency repairs to a burst sewage rising main, contesting with challenging geography on site. Our team worked 24/7 to construct haul roads to facilitate safe access, and enable a subcontractor to carry out temporary repairs to the damaged sewage main.

Elsewhere we installed pumps in [York](#) to pump out the flooded areas in and around the city....repaired and cleared debris from culverts and carried out embankment stability works across [Calderdale](#)... and cleaned out trash screens to keep watercourses clear and prevent blockages in [Lancashire](#).

We also helped to man the pumps during floods in [Keswick](#), before helping local residents to clean up after flood waters had receded... deployed sandbags to lift flood defences in [Hensall](#)...and inspected assets and bridges across [Yorkshire](#) for signs of flood damage.

.....

In late 2016 we received a call from our client requesting assistance with a burst water main in [Hartlepool](#) in the North East of the country.

We responded immediately and had a team on site within two hours. Our operational team then worked closely with our support functions and trusted supply chain, working into the night and throughout the weekend to make safe, repair and reinstate - minimising disruption for our client's customers.

# HEALTH & SAFETY.

## 2016 SAW HEALTH AND SAFETY AT JN BENTLEY REACH NEW HEIGHTS AND FACE NEW CHALLENGES.

More hours were worked across our regions than ever before and more unsafe acts and conditions corrected and reported than ever before. This shows that awareness of health and safety has increased and that our people really do want to be involved.

During 2016 we achieved two periods where over one million consecutive hours were worked without a serious injury, but during 2016 three colleagues did suffer reportable injuries at our workplaces.

The two broken bones in operatives' hands and the badly twisted ankle were all sustained during seemingly innocuous tasks and reinforced the message of the early part of the year which drew attention to the high frequency and generally low risk activities we undertake on a daily basis.

### MORE HOURS WORKED AND MORE UNSAFE ACTS AND CONDITIONS CORRECTED SHOWS THAT OUR PEOPLE REALLY DO WANT TO BE INVOLVED.

Two serious near misses that occurred during higher-risk activities served as a stark reminder of just why health and safety is of paramount importance to the business. Thankfully the positive safety culture demonstrated by our people on both sites prevented injuries from occurring. The ensuing investigations and sharing of the findings across our ever-growing areas of business will ensure that we learn from these incidents.

Record hours worked and our level of reportable injuries means that 2016 saw an improvement in our reportable injury frequency rate (commonly known as the AFR), but we will not let this statistic foster complacency: three reportable injuries is unacceptable and we will continue driving on towards our goal of removing workplace injuries and instances that can cause occupational ill health from our organisation.

Occupational health remains a topic of focus for our teams and we have undertaken a significant programme of face-fit testing to ensure that all persons with the potential of being exposed to hazardous dust have increased options in terms of negating those hazards. With more gentlemen sporting beards we have also purchased positive pressure respiratory protective equipment to protect these individuals.

Moving into 2017 a review of our Health and Safety Strategy is underway as we recognise that we face new challenges as a growing organisation. We are nonetheless prepared to re-double our efforts to face the challenges of our high risk industry with low risk everyday hazards and constant threats to the health of our employees.


As a caring organisation we will face up to these challenges and protect both our workers and anyone else directly affected by our activities.

## OUR PERFORMANCE.

YEAR	HOURS WORKED	NEAR MISSES		FIRST AID INJURIES	MEDICAL TREATMENT/LOST TIME INJURIES (<3 DAYS)	RIDDOR-REPORTABLE
		UNSAFE ACTS/ CONDITIONS	HIGH POTENTIAL			
2012	2,237,691	4,550	75	98	9	1
2013	2,120,650	7,475	23	94	8	3
2014	2,215,675	9,516	14	49	6	4
2015	3,118,626	14,149	10	65	6	3
2016	3,373,664	20,359	25	55	10	3

In 2016 our people reported and corrected more unsafe acts and conditions than ever before.





“IF I CANNOT  
DO IT SAFELY,  
I WILL NOT  
DO IT.”

HEALTH, SAFETY AND  
ENVIRONMENTAL AWARDS 2016:

## WINNER.

HEALTH AND SAFETY  
EXCELLENCE AWARD -  
DCWW CAPITAL DELIVERY  
ALLIANCE.

## 96%.

PLATINUM RATING -  
BUSINESS IN THE  
COMMUNITY'S  
ENVIRONMENT INDEX.

## GOLD.

ROSPA GOLD AWARD  
FOR HEALTH & SAFETY -  
DCWW CAPITAL DELIVERY  
ALLIANCE.

## FINALIST.

NWG GEM AWARDS  
- ENVIRONMENTAL  
SUSTAINABILITY  
ABANDONMENT  
PROGRAMME.

## GOLD.

ROSPA GOLD AWARD FOR  
H&S - ANGLIAN WATER  
@ONE ALLIANCE.

## WINNER.

SILVER AWARD - SEVERN  
TRENT WATER AWESOME  
AWARDS.

## SHORT LIST.

CECA NORTH EAST -  
HEALTH AND SAFETY  
COMPANY OF THE YEAR.

## FINALIST.

NWG GEM AWARDS - H&S  
EXCELLENCE - WATER UK  
PROGRAMME.

# ENVIRONMENT.

**CIVIL ENGINEERING AND CONSTRUCTION MUST ALWAYS GIVE DUE CONSIDERATION TO ITS ENVIRONMENTAL IMPACT.**



Environmental impact covers everything from where projects are located and the choice of materials, to the tools used in construction or choice of power supply, to practical responsibilities such as minimising waste and preventing construction-related pollution or ecological harm. Furthermore, at JN Bentley we recognise that everything we do has a potential impact.

Working in the water industry amplifies the potential impact as we must also consider the downstream effects (whether literal or figurative) of our activities because the decisions taken could impact on the wider ecology and the wider public.

2016 began with the completion of our Energy Savings Opportunity Scheme (ESOS) assessment and in doing so demonstrating our good practices as well as receiving some useful suggestions. In terms of our internal environmental goals, 2016 saw us challenge ourselves to review our

environmental awareness training to address the ever-evolving circumstances in which we operate, as well as promote environmental stewardship to a greater proportion of the workforce, something demonstrated by improved reporting of incidents with the potential to cause environmental harm.

The revised training has already been delivered to 50 employees, and 2016 was a record year in terms of the prevention of environmental incidents, with over 3,400 documented interventions made on our sites and in our offices before any quantifiable incident could result.

Most reassuring is the statistic that as well as record reporting levels, we have seen a wider breadth of individuals from a variety of roles reporting more environmentally-unsafe conditions than ever before. This demonstrates how our responsibilities with respect to the environment are reaching an ever-broader audience.

# 3,483

**2016 WAS A RECORD YEAR FOR THE PREVENTION OF ENVIRONMENTAL INCIDENTS WITH OVER 3,400 DOCUMENTED INTERVENTIONS MADE ON OUR SITES AND IN OUR OFFICES BEFORE ANY QUANTIFIABLE INCIDENT COULD RESULT.**

## CONSIDERATE CONSTRUCTORS SCHEME.

We have a number of projects registered with the Considerate Constructors Scheme (CCS), an independent organisation that aims to improve the image of the construction industry. At **Morpeth**, where we constructed new flood defences, the visiting CCS assessor described our environmental protection measures as “exceptional”, scoring us 9 out of 10 in this category.







The nature of our industry means we are lucky enough to work in some picturesque locations. Take Clywedog in Mid Wales (far left) where we have increased the hydroelectric power capability of the existing dam, and Rivelin Water Treatment Works (left) which lies adjacent to the Peak District National Park.

## OUR PERFORMANCE.

There are three key impact areas on which we focus our efforts and measure performance.

### ENERGY AND EMISSIONS.

We continue to actively monitor our impact on the environment and see energy consumption and the associated emissions as one key focus area.

This particular area can be broken down into embodied emissions, such as concrete and steel; indirect emissions, such as grid-supplied utilities; and direct emissions, such as on site generation, travel and transportation. As with previous years, this is largely dictated by the type of work we undertake. However it is an area that we can influence significantly through effective design, technology and behaviours.

The figures shown are normalised against turnover to take account of the rapid growth within the business and again show performance improvement across the majority of areas, with an overall reduction in CO<sub>2</sub>e and another year-on-year improvement since we started monitoring our business energy impact.

As the order books continue to grow, we will continue to invest in the most efficient plant, seek to pioneer new innovative design with lower OPEX costs, and continue to raise awareness through training to ensure we continue to reduce operational and embodied carbon associated with our work and its legacy of operation.

T CARBON/£M TURNOVER	2008	2009	2010	2011	2012	2013	2014	2015	2016
TURNOVER (£MILLION)	95	86	82	105	120	118	114.6	135	169
In-situ concrete	19.12	23.60	32.43	30.86	49.29	45.20	26.09	28.66	41.97
Rebar	17.25	17.84	31.71	26.62	27.49	20.63	4.66	12.64	15.35
Designed precast concrete	-	-	-	-	-	11.56	5.44	18.94	7.05
- Rebar supplied in PCC	-	-	-	-	-	3.99	1.53	7.33	4.68
Manholes and covers	1.94	2.34	1.51	2.65	1.55	1.79	1.40	0.68	0.83
Aggregates quarried	9.12	5.45	7.57	4.88	4.77	4.32	9.66	10.91	8.18
Aggregates recycled	3.99	6.65	3.62	1.87	3.24	2.24	3.79	1.85	1.41
Aggregates coated	0.14	0.20	0.16	0.80	0.58	0.45	0.52	0.19	0.21
Gas oil	100.61	86.89	82.88	47.64	52.05	43.80	33.53	30.85	28.75
<b>SUBTOTAL</b>	<b>152.2</b>	<b>143.0</b>	<b>159.9</b>	<b>115.3</b>	<b>139.0</b>	<b>134.0</b>	<b>86.6</b>	<b>112.0</b>	<b>107.54</b>
Diesel	22.04	23.71	24.95	18.75	20.09	21.58	23.11	16.09	13.28
Petrol	1.10	2.13	2.61	1.96	0.94	0.87	1.12	1.43	1.32
Natural Gas	0.43	0.63	0.15	0.09	0.40	0.57	0.25	0.29	0.12
Electricity	1.51	1.57	3.20	2.52	2.02	1.21	2.10	1.96	2.24
<b>SUBTOTAL</b>	<b>25.1</b>	<b>28.0</b>	<b>30.9</b>	<b>23.3</b>	<b>23.5</b>	<b>24.2</b>	<b>26.6</b>	<b>19.8</b>	<b>17.96</b>
<b>TOTALS</b>	<b>177</b>	<b>171</b>	<b>191</b>	<b>139</b>	<b>163</b>	<b>158</b>	<b>113</b>	<b>132</b>	<b>125.5</b>

### WASTE MANAGEMENT.

We aim to divert over 90% of the waste we generate from landfill, and by working proactively, following the waste hierarchy, we achieved this again in 2016.

### POLLUTION PREVENTION.

By encouraging employees to report incidents we increase awareness and gather valuable data that will help us to prevent incidents from happening again.

In 2016, performance improved significantly: 3,483 reports were logged, a total up 37% on 2015. Reports came from a broader range of people than ever before, which demonstrates an increase in awareness across the business.

# PEOPLE.

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**PEOPLE ARE JN BENTLEY'S MOST VALUABLE RESOURCE; OUR AIM IS TO PROVIDE THEM WITH A WORKPLACE THEY ENJOY AND IN WHICH THEY ARE CHALLENGED, ABLE TO DEVELOP AND ULTIMATELY BUILD A SUCCESSFUL CAREER.**

---



**THE SUCCESS WE ENJOYED IN SECURING CONTRACTS IN THE WATER INDUSTRY FOR AMP6 MEANT THAT 2016 WAS ALWAYS SET TO BE A SIGNIFICANT YEAR OF GROWTH FOR THE BUSINESS.**

This was certainly the case as employee numbers passed 1,000 for the very first time in our history, a significant milestone. The way that new people are welcomed into the company and are supported through their development is something in which the business takes great pride.

To manage this increase in people numbers we have added extra structure to the new starter and development processes. Personal induction plans guide new employees (and their line managers) through their first six months, and we have structured programmes to support the progression of our weekly resource too.

Our aim is always to try and promote from within; this trend continued as 20 employees moved into more senior roles with us in 2016.

Looking ahead to 2017 we're set for similar levels of growth when

it comes to the number of people joining the team. Next year will also see the scope of our apprenticeship programme broaden, and the way we recognise and reward employees will be refreshed as 'Be Recognised' gets a facelift.

One thing that won't change is that it will continue to be the voice of our people that helps to shape the agenda of our People Steering Group (PSG).

Through 'TalkAbout' sessions with the directors, 'Be Heard' employee consultation forums and new communication technologies such as Yammer, we have more avenues than ever to gather feedback from the workforce and ensure that JN Bentley continues to be a fun workplace where our people can develop and prosper.

**Judith Jeffery | HR Director**





# BUILDING YOUR CAREER WITH US.

IT IS IMPORTANT THAT WE LOOK AFTER AND DEVELOP OUR PEOPLE SO THAT THEY UNDERSTAND THE OPPORTUNITIES AVAILABLE TO THEM AND MEET THEIR POTENTIAL. WE ALSO CARE FOR THEIR WELLBEING AND RECOGNISE OUTSTANDING SUCCESSES.



## JOINING JN BENTLEY.

To deliver an ever-growing workload with clients across the UK, we need to help our new starters get up-to-speed as quickly as possible.

To achieve this we place people in great teams where they are welcomed, helped to settle and introduced to the Bentley culture.

In 2016 we welcomed 312 new people into the business. This included 23 graduates (10 of whom we had sponsored through their final year of university) and an eager group of 21 placement students, looking to experience the world of work on a year out from university.

To add structure and support to the new starter experience, we introduced formalised personal induction plans (PIPs). PIPs take new starters from day one through to the first performance review at around six months. Led by the line manager and supported by a buddy, PIPs work through a number of development objectives, with HR on hand to support the process.

## APPRENTICESHIPS.

Apprenticeships are an increasingly popular way for people to enter the world of work because they offer hands-on experience and the opportunity to 'learn whilst you earn'.

Traditionally our popular apprenticeship scheme, delivered in conjunction with the Construction Industry Training Board and designed 100% in-house, has exclusively recruited budding general construction operatives.

However, taking advantage of changes to the way apprenticeships are funded, we are set to broaden our scope and develop apprenticeships in civil, mechanical and electrical engineering and commercial roles in 2017/18.

Our current apprentices are in the midst of their two-year course. They spent 2016 learning about construction in the classroom before applying what they have learnt out on site, gathering evidence for their Level 2 QCF Diploma in Construction and NVQ in General Construction.

## TRAINING.

With the right attitude and work-ethic we offer great opportunities for development.

Something that sets us apart is our large, directly-employed weekly resource. Direct-employment means we can equip our people with the skills and qualifications relevant to the work that we deliver.

In 2016 we focused on upskilling in areas such as pipe-laying, shoring and concreting. We also focused on utilities avoidance because cable strikes are one of the biggest hazards facing us in the construction industry.

We held practical one day session for gangs, utilising purpose-built mock trenches to make the activities as realistic as possible.

We also launched an intensive five-day utility mapping course for a hand-picked group of engineers. Our Utility Mapping 'Gurus' provide coverage across all of our operational regions and are the 'go to' people when it comes to mapping services on site.



## REWARDING OUTSTANDING WORK.

It is important to recognise our people and teams when they go above-and-beyond their usual responsibilities. We do this through our 'Be Recognised' awards. In 2016, colleagues nominated their peers for recognition every month before voting for their winners. At the end of the year the Board selected their overall winners, before Paul Bentley paid them a visit to deliver the good news in person.

### INDIVIDUAL WINNER 2016:

#### DAN SUTCLIFFE.

Incidents in the press and on our own sites have seen the focus fall on temporary works.

Changes to our training, procedures and management of temporary works were needed, and engineering manager Dan was the man to lead the way in JN Bentley.

From the outset, Dan strived to make temporary works a simple but effective process. He put great time and effort into first developing our procedures and then supporting individuals as the procedures were rolled-out and put into use.

The improvements we see on site demonstrate the impact Dan's hard work over the last two years has had.

### TEAM WINNER 2016:

#### EMERGENCY R&M TEAMS.

In recent years we have become skilled at delivering batches of work – everything from large service reservoirs to small programmes of improvements at sewage treatment works.

A number of gangs came together in 2016 to deliver an emergency repair and maintenance (R&M) programme across Yorkshire. The teams used their initiative to diagnose and then solve the causes of flooding, doing so with a positive attitude. They completed every project handed to them, showing great perseverance.

Much of the work carried out was in private gardens and the teams were friendly, helpful and professional in all of their dealings with customers - a real credit to the business.

### RUNNERS-UP:

#### INDIVIDUAL: EMMA MITCHINSON.

Emma moved from the estimating team into a new role with us in 2016, to help develop our framework with National Grid. She made an immediate impact, her attention to detail, hard work and attitude gaining the client's respect from the off. [Read more on National Grid on p29.](#)

#### TEAM: NORTH WEST SECURITY WORKS TEAM.

2016 brought to a close three years of security works across the North West. The team worked extremely hard and showed great professionalism and determination to complete the project, doing so with an AFR of zero. [Read more on these works on p25.](#)



## DEVELOPMENT.

Formal development schemes for civil and M&E engineering, quantity surveying and procurement are well embedded. Over 120 employees have enrolled, supported by 70 mentors across the business.

Our development programmes tie in with the objectives of the relevant professional body:

- ICE - Institution of Civil Engineers.
- IET - Institution of Engineering and Technology.
- ICES - Chartered Institution of Civil Engineering Surveyors.
- CIPS - Chartered Institute of Procurement and Supply.

This means that our people work towards a professional qualification at the same time as meeting our own internal standards.

We have a structured development programme for our weekly resource, highlighting how they can move up the ladder from general construction operative to lead hand to foreman, engineer and beyond. We have a number of colleagues earmarked for progression through the scheme in 2017.

## HAPPY AND HEALTHY.

We care about the health and wellbeing of our people; it is important to us that our workforce feel valued and enjoy coming to work. We have an ever-maturing programme that focuses on three key areas of wellbeing – physical, emotional and financial.

In 2016 we ran periodic campaigns highlighting issues relevant to our people, such as men's health, smoking and sun awareness, and ran a quarterly wellbeing prize draw giving all employees the chance to win prizes worth up to £1,000.

Caring about the health and wellbeing of our people was a key theme at the 2016 company seminar. A session run by PSG celebrated 'people' successes from across the business and explained the variety of benefits on offer, including a health cash plan that enables our people to claim money back for 'everyday' health costs.

Wellbeing is very much a focus of the PSG in 2017. Key to this will be employee input which will help shape the programme.

**WELL DONE  
TO ALL 17  
COLLEAGUES WHO  
SUCCESSFULLY  
COMPLETED  
PROFESSIONAL  
QUALIFICATIONS  
WITH US IN 2016.**

# COMMUNITY.

OUR PEOPLE HAVE A LOT TO OFFER THE COMMUNITY SO OUR STRATEGY FOCUSES ON OFFERING THEIR SKILLS, TIME AND EXPERTISE TO HELP MAKE A DIFFERENCE.

OUR APPROACH IS THREE-FOLD:

- WE PARTNER WITH SCHOOLS, COLLEGES AND UNIVERSITIES.
- WE DELIVER PROJECTS IN THE COMMUNITY WITH COURTESY AND CONSIDERATION.
- WE SUPPORT CHARITABLE GIVING AND FUNDRAISING.

#### **BUSINESS IN THE COMMUNITY.**

JN Bentley is a long-standing member of Business in the Community, a business-led charity committed to continually improving our positive impact on society through corporate social responsibility.







## EDUCATIONAL PARTNERSHIPS.

We have a long history of bringing people into the JN Bentley team direct from school and university so our partnerships with the education sector are very important. The links serve to open students' eyes to world of engineering, promote the STEM (science, technology, engineering and maths) agenda and showcase our business as a great place to come and work. They provide our people with valuable opportunities for professional development too, and is something we have committed to as part of our 2017 business plan.

### THE STEM AGENDA.

A number of our engineers are registered as STEM Ambassadors, taking time out to promote the STEM subjects to budding engineers.

This year the group volunteered at an event at RAF Scampton, where 20 leading companies – including MMB – showcased their work to over 200 young people alongside the famous Red Arrows.

Ambassadors also teamed up with the ICE to lead the 'Bridge to Schools' activity in Oswestry. In building the a 15m long cable-stayed bridge, pupils learnt about what a civil engineer does and the importance of working safely.



“I WANTED TO BE A DOCTOR BEFORE, BUT NOW I WANT TO BE A CIVIL ENGINEER!”  
PUPIL AT WOODSIDE SCHOOL, OSWESTRY

### ENGINEERING EDUCATION SCHEME.

We have partnered with the Engineering Development Trust for a number of years to run the Engineering Education Scheme with sixth form students across the country. Setting participants a 'real life' brief linked to one of our schemes, students are challenged in engineering, team-working, problem solving and communication.

### ENGINEERING SPECIALISTS.

We have a long-term partnership with engineering and STEM academy Skipton Girls' High School, mentoring pupils through their A-levels in engineering and supporting Water Week, an initiative promoting water conservation and the work of WaterAid.

### SITE VISITS.

Giving primary school pupils the chance to visit construction sites not only provides them with a memorable school trip but also helps to reinforce the fact that building sites are not playgrounds.

In the North East, pupils linked their Villa Real site visit in with their current geography and history lessons on the local area, and at Barnard Castle, one pupil from Green Lane Primary School was inspired to say, "When I grow up I'm going to build stuff!"



### CONSTRUCTARIUM.

'Constructarium' is a hands-on initiative that gives participants chance to build scaled-down versions of iconic structures.

We supported civil engineering students from the University of Leeds with their construction week. Our team assisted in all areas of construction, from planning to setting out, steel fixing and concreting. As well as benefiting the students, the week was a great experience for our team made up of engineers and lead hands.



## PROJECTS IN THE COMMUNITY.

We approach our projects with consideration and courtesy towards the community – cementing good relationships is essential to the success of any scheme. We like to ‘give a bit back’, and we encourage our people to give their skills, time and expertise to help with different community projects close to where they live and work.



### CLOWBRIDGE IMPOUNDING RESERVOIR.

Sharing site access with a well-established sailing club meant that communication and high standards were critical during a reservoir scheme at Clowbridge in Lancashire. At the conclusion of the scheme we donated a defibrillator to the organisation. Commodore for Rossendale Sailing Club, Dave Hudson, said, “From all of the club members – thank you. This is an essential piece of kit ... We also want to thank you for how you have kept us informed throughout the project, it has been greatly appreciated.”



### LLANPUMSAINT WASTEWATER TREATMENT WORKS.

On this constrained site in South Wales we worked with a local landowner to negotiate use of their playing fields to house our site cabins. We then reinstated the land and upgraded footpaths. The secretary of the local Welfare and Recreation Association said, “May I say how helpful and obliging the crew from Bentley’s have been throughout the period on site.”



### COWLEIGH DISTRIBUTION SERVICE RESERVOIR AND PIPELINE.

In Worcestershire our project is weaving through the streets of the popular market town of Malvern. The team has been proactive with the community, hosting a public exhibition and engaging with residents. The approach has been well-received, and the team rewarded with a plentiful supply of tea and cakes. The client has been delighted with progress, commenting that the site had the highest standard of tidiness they had seen.



### BLACKPOOL SOUTH.

All of the different facets of the MMB team came together in Blackpool to contribute to the BBC ‘DIY SOS’ charity special, ‘Million Pound Build for Children in Need’. The project renovated a Victorian house into a new, much needed, young carers’ facility, in support of the Blackpool Carers Trust. Working on the preliminary stage of the build, we laid a new sewer at the rear of the property, sourcing materials from local suppliers.

## CHARITABLE GIVING AND FUNDRAISING.

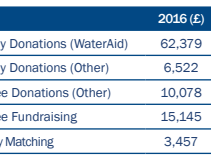
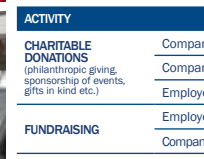
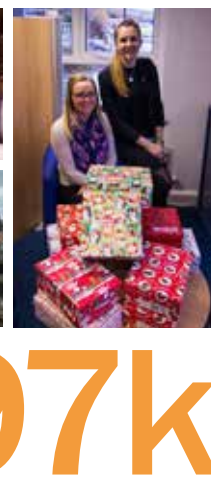
It is fair to say that there are plenty of generous people at JN Bentley, many of whom are up for a challenge and a laugh along the way.

### WE SUPPORT EMPLOYEES’ EFFORTS, MATCHING THEIR FUNDS RAISED UP TO £100.

Below is everyone who received matched fundraising from the business in 2016:

Ibrar Ahmed - British Heart Foundation • Shahida Ahmed - Children with Cancer UK, Martin House, Over the Wall • Ian Bester - Sue Ryder • Karen Booth - Friends of Upper Wharfedale School • Kieran Butler - WaterAid • Craig Clarke - Rett UK • Matthew Cooper - Mind UK • Amy Crawshaw - Martin House • Jamie Crosby - Mesothelioma UK • Ryan Deall - Cancer Research UK • Janine Edwards - SANDS • Jonathan Edwards - Children with Cancer UK, Martin House, Over the Wall • Katie Eytton - Alder Hey Children’s Charity • Sam Green - Mind UK • John Greenwood - Kirstin Royle Trust • Ruth Harper - Mind UK • Mark Harrison - WaterAid • Neil Harrison - Mind UK • Phil Holden - WaterAid • Dean Holmes - MND • Gemma Holmes - MND • Melvyn Jordan - Rett UK • Alan King - St Gemma’s Hospice • Vishnu Kumar - Harefield Hospital • Jamie Laird - Emmaus Leeds • Jamie Lord - WaterAid • Dan Lucks - Rett UK • Declan Mawson - WaterAid • David McNeill - WaterAid • Michele Moorcroft - Friend’s of Alfie Johnson • Sarah Park - Make A Wish Foundation • Julie Parker - Huntingdon’s Disease Association • Gohir Rashid - Sue Ryder • Mick Riddiough - Mid Yorkshire Hospitals NHS Trust • William Sah - WaterAid • Scott Whitaker - MND • Rob Smith - WaterAid • Michael Taylor - Children with Cancer UK, Martin House, Over the Wall • Trudie Thomas - Mind UK • Nicola Wilson - Gargrave Playground Association • Kevin Young - Sue Ryder

On a regular basis our teams pull together and organise charity events in the office and on site. Our operational regions also join forces to support some of the larger national charities – this year Sport Relief, Macmillan and Children in Need were some of the beneficiaries of the teams’ efforts.



**£97k**  
TOTAL

ACTIVITY	2016 (£)
CHARITABLE DONATIONS (philanthropic giving, sponsorship of events, gifts in kind etc.)	Company Donations (WaterAid)
	62,379
	Company Donations (Other)
FUNDRAISING	6,522
	Employee Donations (Other)
	10,078
FUNDRAISING	Employee Fundraising
	15,145
	Company Matching
	3,457



# LOOKING AHEAD.

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## **WE ARE NOW COMING TO THE END OF THE SECOND YEAR OF THE FIVE YEAR AMP6 PERIOD (2015-20), AND ARE STARTING TO SEE THE GROWTH IN WORKLOAD THAT WE HAVE BEEN PLANNING FOR.**

Turnover continues to grow year-on-year, by 17% in 2015, by 26% in 2016, and our outlook for 2017 is for a further rise of 34%. Of the £224m budgeted turnover for 2017, £180m (80%) is already secured, with further work expected through direct allocation within existing frameworks.

This is a strong position, and demonstrates the benefits of our long-term sustainable frameworks with Anglian Water, Dŵr Cymru Welsh Water, Northumbrian Water, Severn Trent Water, United Utilities, and Yorkshire Water.

Large schemes often contribute to turnover growth in the middle of an AMP period, and AMP6 is no exception. 2017 will see us deliver individual schemes greater than £20m in value at Five Fords near Wrexham (with Dŵr Cymru Welsh Water), at Blackpool (with United Utilities), and at Rivelin Water Treatment Works near Sheffield (with Yorkshire Water).

Mott MacDonald Bentley is now firmly established as a leading solution provider to the UK water industry. This has been achieved through everyone's hard work and dedication over many years, something of which we can all be very proud.

## **MOTT MACDONALD BENTLEY IS NOW FIRMLY ESTABLISHED AS A LEADING SOLUTION PROVIDER TO THE UK WATER INDUSTRY.**

In the environment sector, JBA Bentley's work for the Environment Agency will continue at around £15m-£20m per year. Of particular focus in 2017 will be the asset recovery work in Northamptonshire and Lincolnshire, being delivered from the JBA Bentley Peterborough office, as well as completion of work on the Foss Barrier in York. A further £2-3m will be added through the Confluence framework work with the Coal Authority.

Our future in the energy sector is looking very exciting as we continue to build capacity and capability. In 2016 we successfully delivered several projects for National Grid, including works at Alrewas Gas Compressor Station in Staffordshire.

In 2017 our team in Carr Hall will be working closely with Mott MacDonald's expert design team based in Hinckley to deliver gas work on a design-and-build basis. Investigation work for a large batch of projects in the South West of England are on-going, and should lead to construction later in 2017. Meanwhile, construction at Carnforth Compressor Station in Lancashire is due to start in the spring. Further projects have been secured throughout the UK for delivery in 2017, and we continue to tender opportunities in this sector.

Future work must be delivered safely and efficiently. The high level organisational structure is in place for this delivery, but new teams will need to be formed, and new colleagues welcomed into the business as we now exceed the milestone of 1,000 employees.

Whilst we expect the rate of growth to slow from 2018 onwards, the outlook for the company continues to be very positive, bringing many challenging, exciting and rewarding opportunities for teams across the four existing operating areas and beyond.

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## ANNUAL REVIEW 2016.



Part of the Mott MacDonald Group

[www.jnbentley.co.uk](http://www.jnbentley.co.uk)

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