



JBA

Bentley

WHO WE ARE

JBA BENTLEY IS AN INTEGRATED DESIGN AND BUILD CONTRACTOR SPECIALISING IN THE SAFE AND EFFICIENT DELIVERY OF LOW CARBON SOLUTIONS. WE WORK WITH OUR CLIENTS TO DEVELOP AND DIRECTLY DELIVER SUSTAINABLE SOLUTIONS FROM CONCEPT TO COMPLETION.

> leading specialists in environmental ever since. engineering and management, joined forces with innovative national civil Celebrating our 10th birthday in 2023, engineering contractor JN Bentley, to we're proud to have built a sustainable form JBA Bentley.

> together the vast and highly respected colleagues across the UK who have technical expertise of JBA Consulting helped us achieve this by continuing to with a long-standing, forward-thinking find better, safer and more sustainable national civil engineering contractor in solutions to challenges facing our clients.

> In 2013, JBA Consulting, one of Europe's JN Bentley. And we've not looked back

business that continues to grow organically through repeat custom. Establishing JBA Bentley brought We're proud too of our 200+ talented

OUR TEAM OF TALENTED COLLEAGUES FIND BETTER, SAFER AND MORE SUSTAINABLE SOLUTIONS TO CHALLENGES FACING OUR CLIENTS.

WHAT WE



OUR SERVICES WE OFFER A RANGE OF SERVICES FROM PROJECT CONCEPT THROUGH TO COMPLETION, WITH THE AGILITY TO ADAPT OUR SERVICES TO SUIT OUR CLIENTS' NEEDS.

PROJECT APPRAISAL AND FEASIBILITY STUDIES | We work with our clients to help understand their challenges. We can carry out early investigations and surveys, stakeholder engagement, develop and model different options, assess environmental impacts and benefits, and analyse the commercials.

As an integrated design and build contractor, our clients benefit from complete advice on technical solutions, asset optimisation, decommissioning, value engineering, buildability and risk management.

DESIGN | From outline solutions through to detailed design, our in-house design team can draw upon a vast range of specialist expertise COMMISSIONING AND HANDOVER from across our business.

Within JBA Bentley, design is not carried out in isolation: our construction and commissioning staff are involved at every stage to give us a

holistic view of opportunities and risks. It also means we assess buildability from the outset, using our collective understanding to get things right first time.

AND

ENGINEERING

CONSTRUCTION | We are a principal contractor that takes responsibility for all aspects of construction, delivering works using our own large pool of directly employed colleagues. This ensures that everyone works to the high standards we demand for safety, the environment, time, cost and quality. Our multi-skilled construction gangs allow us to react guickly and flexibly to the needs of our clients.

| Our in-house commissioning engineers work as part of our project delivery team to ensure asset optimisation. They carry out the relevant inspections, testing and training prior to handover.

OUR CAPABILITIES AS A NATIONAL PROVIDER OF

DESIGN AND BUILD SERVICES. WE'RE CAPABLE OF PROVIDING A RANGE OF SERVICES. FROM:



OUR EXPERTISE WE DELIVER A RANGE OF SERVICES USING OUR IN-HOUSE EXPERTISE.

DESIGN

- > Coastal flood modelling accounting for tides, storm surges, wave development, transformation and overtopping, sediment transport, beach morphodynamics and flood inundation.
- > Fluvial, coastal and tidal flood defences, impounding structures, coastal erosion and scour protection.
- Nature-based and natural flood management solutions, inc. SuDS, wetlands, flood storage reservoirs and coastal managed realignment schemes.
- > Catchment and river restoration drawing on our ecology, engineering, geomorphology, hydrology, GIS and modelling specialists.
- > Waterways, including landing stages, moorings and portage points.
- > Ground engineering that embraces geology, geohazards, geomorphology, slope stability, hydrogeology, advanced geomechanics and geoenvironmental engineering.
- > Fisheries, including technical and nontechnical fish passes, hydraulic habitat modelling, fisheries impact assessment and screening.
- > Pumping and control systems.
- > Impounding reservoirs.
- Mechanical and electrical installations.
- > Traditional building and structural design.
- > Renewable energy solutions.
- > Carbon management.
- > Principal Designer services under CDM.

CONSTRUCTION

> Working on/adjacent to watercourses including flood defences, dredging, wave and scour protection, impounding and conveyance structures.

- Environmental works such as natural flood management, fish passes, river restoration, habitat creation, wetlands, managed realignment and much more!.
- Maritime works including coastal defences (sea walls, outfalls, revetments, groynes and embankments), breakwaters, quay walls, jetties, pontoons, linkspans and infrastructure/buildings for ports and harbours.
- Pumping stations, from new builds to refurbishments.
- > Water treatment everything from clean to waste to mine water.
- Mechanical, electrical instrumentation control and automation (MEICA).

We have further in-house expertise in renewables, from processing plants to hydropower, as well as expertise in traditional building and civil engineering works for commercial and industrial clients.

SUPPORT

- Project management, from individual projects to planning and delivering programmes of work.
- Incident response support our range of directly employed technical and delivery staff can react quickly and flexibly to provide support when our clients need it most.
- Communications and public consultations, working with clients to plan, map, engage and deliver communications.
- Environment support, including archaeology and cultural heritage support, ecology, and compliance with environmental legislation and regulations.

WHO WE WORK WITH

ENVIRONMENT AGENCY

Our first client was the Environment Agency (EA) in 2013. We've established ourselves as a respected and high performing framework supplier to the EA, delivering large volumes of work through their Water and Environmental Management (WEM), Marine & Coastal (MCF) and Flood and Coastal Erosion Risk Management (FCERM) frameworks. We have recently been appointed to the EA's Asset Operations, Maintenance and Response (AOMR) framework to deliver works across the North-East, North-West and Eastern regions.

THE COAL AUTHORITY

We secured places on frameworks with the Coal Authority in July 2020. Whilst both JN Bentley and JBA hold long standing relationships with the Coal Authority, providing consultancy and civil engineering services respectively, the appointment of JBA Bentley realises the benefits of a single service provided by an integrated design and build engineering contractor.

CANAL AND RIVER TRUST

In 2022 we were appointed as a sole supplier to deliver complex works for the Canal and River Trust (CRT) in the North of England - an arrangement that could last up to 10 years. We were also appointed to several regional lots of the framework to deliver non-complex works across the North of England.

INDIVIDUAL PROJECTS

As well as delivering programmes of work, working with JN Bentley we've delivered several projects for clients and frameworks, including the Canal & River Trust, National Trust, and a host of local risk management authorities and internal drainage boards.

SAFETY

THERE IS NOTHING THAT WE CARE MORE ABOUT THAN MAKING SURE THAT WE ALL GO HOME SAFE AND WELL AT THE END OF THE WORKING DAY. OUR VISION FOR HEALTH AND SAFETY IS TO ACHIEVE ZERO INJURIES AND TO PREVENT OCCUPATIONAL ILL HEALTH.

We strive to work in a safe place 'Beyond' Alongside our Health & Safety Strategy, Zero' and firmly believe that we can achieve this by working as a team and caring for each other. Whilst good planning reduces the chance of unplanned events, our collective behaviours have an impact. We continue to build on our work in coaching safety performance improvement - primarily through our "I Care" behavioural programme, reinforced by several supporting initiatives.

We see safety as a positive experience, where people make better choices with the help of their teams. We've worked hard to build a sustainable culture where everyone takes responsibility for their teams, their colleagues and their own health and safety.

our Wellbeing Strategy supports our colleagues physically, financially and emotionally - creating an environment where our colleagues are happy, healthy and safe, enabling everyone to fulfil their potential.

The standards and processes we developed and implemented have helped us to achieve industry leading health, safety and environmental performance. We ended 2023 with a record low All Injury Frequency Rate (AIFR) - a result testament to the efforts of all colleagues and high levels of engagement.

PERFORMANCE

the number of 'all injuries' per our initial Health & Safety Strategy ▲ 40% Positive interventions made by colleagues and suppliers

▼39% Serious near misses

▼1% All injury frequency rate

WE SEE SAFETY AS A POSITIVE EXPERIENCE, WHERE PEOPLE MAKE BETTER CHOICES WITH THE HELP OF THEIR TEAMS.



Bentley

ENVIRONMENT

WITHOUT CARE FOR THE BUILT AND NATURAL ENVIRONMENT, WE WOULDN'T HAVE A SUSTAINABLE BUSINESS. IT'S NOT JUST ABOUT REDUCING THE POTENTIAL FOR HARM AND MINIMISING OUR IMPACT -IT'S ABOUT TAKING RESPONSIBILITY TO IMPROVE THE ENVIRONMENT FOR THE COMMUNITIES IN WHICH WE WORK.

We treat environmental management with the same rigour as we do health and safety; a suite of processes, standards and procedures on core areas are complemented with training courses and the sharing of best practice.

Our colleagues are engaged and empowered to challenge and make positive interventions to 'talk green' and 'make green' everyday. We've worked over 20 million hours across our business since our last reportable environmental harm event.

RECOGNITION | WE RECENTLY SCOOPED THREE INTERNATIONAL 'ENVIRONMENTAL BEST PRACTICE' GREEN APPLE AWARDS:

SOUTH FERRIBY

Flood protection scheme included collaboration with Natural England to protect local ecology, part of a Site of Special Scientific Interest and Special Protection Area.

BENTLEY INGS PUMPING STATION

Instead of constructing new, significant reuse of existing infrastructure reduced capital carbon by 60%.

SHEAF SCREEN

New low carbon debris screen reduces flood risk, with trees and hedgerows planted to support the local environment.



DELIVERING QUALITY SOLUTIONS IN A COST AND EFFICIENT WAY

WE UNDERSTAND THAT OUR CLIENTS ARE UNDER PRESSURE TO DELIVER MORE FOR LESS; IT'S A CHALLENGE THAT WE'RE FAMILIAR WITH AND ONE THAT WE EMBRACE.

QUALITY, COST & EFFICIENCY STRATEGY

We believe that it is possible to deliver more for less and add value for our clients. Our **Quality, Cost & Efficiency Strategy** focusses our collective minds on removing waste, minimising non-value adding activities and maximising value in everything that we do. The strategy provides us with a framework to capture, review and share learnings across our group to reduce cost and realise efficiencies.

NETWORKS OF TECHNICAL EXPERTISE

The vast **networks of technical expertise** across our group provide us with access to new ideas, best practice and innovations from a host of disciplines and sectors. This drives efficiency in design development and helps to us to find better, safer and more sustainable solutions to challenges facing our clients.

DIGITAL TRANSFORMATION PROGRAMME

We're constantly finding smarter ways to work. Our **digital transformation programme** has already driven improvement at every stage of delivery; from data capture, optioneering and design, pre-construction, construction through to commissioning and handover.

INTEGRATED DELIVERY TEAMS

We seek to deliver efficiencies in how we deliver our works too. We use lean and **integrated delivery teams**, which bring together design, construction and commercial expertise, with the support of specialist disciplines and our supply chain when required. Our integrated delivery teams are client focussed, agile and empowered.

OWN RESOURCES

We aim to deliver projects using our **own design, construction, commissioning and plant resources.** This reduces on-costs and provides us with control and agility to respond to our clients' needs.

LOW CARBON SOLUTIONS

WE'VE TAKEN GREAT STRIDES TO ENSURE THAT OUR COLLECTIVE MINDS ARE FOCUSED ON THE DEVELOPMENT AND DELIVERY OF SUSTAINABLE LOW CARBON SOLUTIONS. OUR CARBON CULTURE FOCUSES ON THREE SPECIFIC AREAS:

1 CARBON MINDSET

2 CARBON IN DELIVERY

Learning from our experiences in developing our industry leading health, safety, and environmental practices, creating behavioural change was fundamental to developing a carbon mindset.



This is continually reinforced through comprehensive training and support to raise awareness and understanding across design, operations, commercial, plant, procurement and our supply chain. This has helped us to embed a culture where our integrated delivery teams are engaged and take responsibility for reducing carbon at all stages of the project lifecycle. We have established processes that integrates the assessment of carbon into every stage of the project lifecycle, ensuring the consistent application of PAS2080's carbon reduction hierarchy.

From the outset of a project, a carbon and sustainability workshop is held to identify opportunities for environmental enhancement and carbon reduction. Carbon risks and opportunities are captured at every stage, whilst buildability is assessed from the outset and throughout to minimise capital carbon associated with our work. Opportunities for carbon savings (embedded, capital, and operational) are assessed and captured in the same means in that we assess financial cost throughout the development of a project, with carbon assigned a financial value.

Clear carbon targets are set from inception, calculating baselines, and monitoring the reduction of carbon emissions throughout the project lifecycle to inform of progress.

Crucially, our procedures ensure that decisions are challenged and informed by their environmental impact, not just cost and programme.

TO BE NET ZERO ACROSS ALL OPERATIONS (SCOPES 1, 2 & 3) BY 2040.

WE'RE PROUD OF OUR PROGRESS TO DATE, WE RECOGNISE THAT THERE'S LOTS MORE TO DO.

3 CARBON TOOLKIT

We continue to invest tools and equipment to reduce carbon in the delivery of projects.

The Moata Carbon Portal (developed by parent company Mott MacDonald) provides us with a means of measuring and monitoring carbon through design. With it we can quickly assess the carbon benefits of any change. The portal also helps to set accurate baselines, provides real-time reporting information, and can be used to complement the EA's carbon management process as it aligns with ERIC Carbon Modelling Tool and the Carbon Calculator.

Another target area is our operational carbon. We own a substantial fleet of plant, vehicles, and equipment with significant and sustained investment in innovative new plant that comply with the latest emission regulations. Examples of such include our Intelligent excavators, which limit minimise plant movements and the use of hybrid excavators that reduce fuel consumption by c. 20%.



49% carbon reduction

BENTLEY INGS PUMPING STATION

Bentley Ings Pumping Station provides flood protection to 1,669 properties. Our upgrade used future-thinking flood models to influence the solution, reusing most existing infrastructure to save 49% embodied carbon over a rebuild option whilst boosting pumping capacity by 20%.

MORE ON P10



96% CARBON REDUCTION

SHEAF SCREEN

LOW CARBON DELIVERY - EACH AN AWARD WINNER

On the River Sheaf we installed a new curved screen and automated screen cleaning system to reduce the risk of localised flooding. Opting for an automatic grab - instead of manual - reduces the number of maintenance visits required, resulting in a carbon saving of 96%.

MORE ON P11



70% CARBON REDUCTION

GREAT YARMOUTH DEFENCES

Our tidal defence project at Great Yarmouth saw the repair repaired and replacement of flood defences protecting 4,500 properties. We achieved a 70% carbon reduction through careful planning, innovative design, material reuse and engaging with the local supply chain.

MORE ON P11

WHAT WE DELIVER

PUMPING STATIONS



BENTLEY INGS

Refurbishments have improved the resilience of Bentley Ings Pumping Station, increasing pumping capacity by 20% in the event of a flooding.

We replaced the station's 80 year old pumps and engineered new infrastructure to ensure staff can safely access the site in flood conditions. Over 900T of carbon was saved on the project by challenging the original scope and doing things a little differently.

Client: EA | Value band: £5m-10m

FOSS BARRIER

Client: EA | Value band: £20m-30m

Severe floods in York caused major damage to the Foss Barrier Pumping Station.

Our solution was two-fold: involvement in the emergency response and then delivery of the high-profile permanent works, including the installation of new pumps and an extension to the existing building that house critical MEICA equipment. The project scooped a prestigious to 750 properties and minimised the form and British Construction Industry Award in 2019.

HOLDERNESS

Day-to-day flood management of the Holderness drain is dependent on three aging pumping stations, one of which had failed altogether.

Our solution addresses the failed asset, reduces flood risk, and improves catchment resilience. Combining the new pumping station with flood storage works provided additional flood protection footprint of the impounding structures.

Client: EA | Value band: £10m-20m

PROJECT MUNIO

We designed and built a new pumping station to protect the city of Derby from flooding.

The new pumping station passes forward flows in excess of 4,500 litres per second. Large pointed hydraulic flood gates close automatically when the River Derwent reaches a certain level. Also included are sheet-piled river walls and a small fish refuge area. The scheme has pioneered digital construction, including 3D printing.

Client: Derby City Council | Value band: £5m-10m

STRUCTURES



ULVERSTON

With a history of flooding, the Cumbrian town of Ulverston required major flood defence improvements to provide 1-in-100 year protection to over 500 properties.

We raised existing defences and refurbished long culverts. Our solution achieved a cost saving of 17% and throughout utilisied construction techniques that minimised disruption to the busy market town.

Client: EA | Value band: £5m-10m

SHEAF SCREEN

With the screen and associated infrastructure at Sheaf in poor condition, with some elements operating beyond the end of their service life, the asset required modernisation.

Carbon savings in excess of 700T were made as we designed and constructed a new screen and innovative solution for debris clearance, utilising an automatic grab that significantly reduces the number of site visits required by our client's staff.

GREAT YARMOUTH

Great Yarmouth has a history of flooding; in 2013, 9,000 people were urged to evacuate when the highest ever tide was recorded on the town's river.

We have refurbished 4km of existing flood defence walls, raising defences and installing cathodic protection. Instead of just replacing quay piling as originally proposed, we refurbished existing defences, reducing costs on this element of works by 47% and carbon by 60%.

BRADFORD CULVERTS

We have engaged with Bradford Metropolitan District Council to undertake work on culverts in the city centre.

This remediation scheme will address issues will badly corroded beams. Our works will ensure the integrity of culverts through the installation of structural glass reinforced plastic (GRP) liners with associated grouting works.

Client: Bradford MDC | Value: <£1m

Client: EA | Value: £1m-5m

Client: EA | Value: £30m+

MULTI-SITE WORKING



EMERGENCY RESPONSE

needs of our clients at short notice, providing a fast, effective and safe response.

When torrential rain hit parts of East Yorkshire in 2019, our team worked with the EA, RAF, Army and emergency services to help with local relief efforts, preventing a major flooding incident. During the Boxing Day floods of 2015, we deployed to numerous locations to provide expertise and assistance to clients dealing with rising waters.

ASSET REFURBISHMENT

We pride ourselves on our ability to react to the The Asset Refurbishment Programme of Works (ARPW) comprises a variety of works focusing on providing longevity to existing assets. This includes repairs/reinforcement to flood walls, bridges, embankments, siphons and sea walls; plus the delivery of structural inspections; ecological impact assessments, and dredging. Since 2014 we've delivered 500+ ARPW projects, driving a 10% saving, developing standard ways of working to deliver these efficiencies.

Client: EA | Value band: £50m+

LINCOLN FLOOD DEFENCES New and improved flood defences were required

at eight different locations across Lincoln.

We created a hub in the city centre to enable easy access to sites in the surrounding area. From replacing sluice gates to rebuilding flood walls to installing new sheet piling, on each site we dealt with the challenges of working in tight public areas, employing techniques such as silent piling to minimise disturbance to our neighbours.

Client: EA | Value band: £5m-10m

IMAGES **1-4 EMERGENCY RESPONSE 5-7 ARPW 8 LINCOLN FLOOD DEFENCES**

NATURE-BASED SOLUTIONS

IN NUMBERS:

5000

5,000 trees and 1km hedgerow planted

275

Provision of over 275 hectares of new habitat

23000

Designing out 40.000t of armourstone saved 23,000t of CO₂e alone

70%

70% of site labour live within 15 miles of site: 67% construction spend within 75 miles



OUTSTRAYS TO SKEFFLING MANAGED REALIGNMENT

The Humber Estuary is recognised as one of the most important estuaries for wildlife in Europe. Our Outstrays to Skeffling Managed Realignment by dumper and dozer. Scheme is engineering new habitats for wildlife on the estuary's north bank. It involves the construction of a new inland embankment, ready for existing defences to be breached to enable sea water to enter and create new habitats.

Despite over 20% of working days being lost due to The project is set for completion in 2024. poor weather, major progress was made in 2023. The entire length of flood embankment was

completed, together with wave bund, constructed from over 800,000t of site-won material moved

Over 6km of fencing and 3.5km of stone paths were built; over 10t of grass seed sewn over 26 hectares of embankment; and over 11,000 trees, shrubs and hedgerows planted.

275

THE PROJECT IS PROVIDING **200HA OF INTERTIDAL HABITAT** AND 75HA OF SUPPORTING HABITAT. THESE ALLOW FOR THE NATURAL MIGRATION OF INTERTIDAL HABITATS IN **RESPONSE TO SEA LEVEL RISE** AND TO COMPENSATE FOR HABITAT LOSS DUE TO COASTAL SQUEEZE.

MINE WATER TREATMENT SCHEMES





POLKEMMET

At Polkemmet in Scotland, we are improving the existing mine water treatment scheme with new settlement lagoons and aeration cascade, refurbishing reed beds and upgrading the pumping station. Monitoring and managing carbon through the Moata Carbon Portal, we are set to achieve a 39% carbon saving against baseline. Contributors include a reduction in fill material in the lagoons, eliminating 200+ wagon movements.

KIMBLESWORTH

At Polkemmet in Scotland, we are improving the existing mine water treatment scheme with new settlement lagoons and aeration cascade, refurbishing reed beds and upgrading the pipework, and landscaping.

> The earthworks were delivered right first time and four weeks ahead of programme by using a GPS dozer working from a CAD model. Furthermore, no topsoil was removed from site; all was reused as growing medium in the reed beds.

Client: Coal Authority | Value band: <£1m

LYNEMOUTH

Pumping capacity needed increasing at Lynemouth to manage rising water levels.

We constructed new cascades, treatment lagoons, an ochre sludge drying bed and associated infrastructure. The scheme presented a number of challenges, from managing buried structures and pockets of asbestos; to working near railway lines; to safely dealing with 100,000T of contaminated soils.

Client: Coal Authority | Value band: £1m-5m

IMAGES 1 POLKEMMET 2 KIMBLESWORTH 3 LYNEMOUTH

Client: Coal Authority | Value band: £1m-5m

WATER AND ABANDONED METAL MINES



CARRSHIELD

The Carrshield tailings dam stores 48,000m³ of highly metal contaminated mine wastes at risk of failing due to a deteriorating retaining wall.

Works by JBA Bentley reduced loading on the wall and minimised water flows through the tailings and wall itself. This included a surface water interception drain, wall repairs, regrading and capping to the tailings. Legato® block were used to construct the retaining wall, a solution reducing costs by £90k and programme by eight weeks.

Client: Coal Authority | Value band: £1m-5m

WEST ALLEN CHECK WEIR

The River West Allen contained high levels of metal-contaminated sediment. The project set out to capture 1T of these metals every year, limiting their movement downstream.

We built a permanent structure across the river to encourage deposition and capture of metal-rich sediments, incorporating an EA Fisheries Panelapproved fish pass. A new track provided access for construction and future dredging of the check weir.

Client: Coal Authority | Value band: <£1m

GARRIGILL

A culvert at Garrigill Burn had part collapsed allowing 3T of metals to enter the watercourse and pollute the river each year. After taking all aspects of environment, ecology, heritage, buildability and cost into account, we installed a solid piped connection between the upper and lower culvert, reprofiled the spoil and installing a new revetment to mitigate future slippage and run-off during high rainfall. A Legato® block wall was faced with natural stone to provide structural support and contain silts.

Client: Coal Authority | Value band: <£1m

IMAGES

1 CARRSHIELD **2 WEST ALLEN** 3-4 GARRIGILL

DELIVER

Z

ABANDONED

RECOGNITION

REPEAT BUSINESS IS THE RECOGNITION THAT WE'RE LOOKING FOR - BUT IT'S NICE TO PICK UP AN INDUSTRY AWARD OR TWO ALONG THE WAY.



BRITISH CONSTRUCTION INDUSTRY AWARD WINNER ENVIRONMENTAL PROJECT OF THE YEAR: MILL FLEAM PUMPING STATION

JBA BENTLEY IS AN INTEGRATED DESIGN AND BUILD CONTRACTOR SPECIALISING IN THE SAFE AND EFFICIENT DELIVERY OF IOWCARBON SOLUTIONS.

WANT TO LEARN MORE?

- VISIT jba-bentley.co.uk
- EMAIL info@jba-bentley.co.uk
- CALL 01756 799425
- MEET Skipton Keighley Road, Skipton, North Yorkshire, BD23 2QR Floor 3, 1 Whitehall Riverside, 1 Riverside Way, Leeds, LS1 4BN Peterborough - West Point, Peterborough Business Park, Lynch Wood, Peterborough, PE2 6GG

FOLLOW X@JBABentley in /j-b-a-bentley



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