



BUSINESS REVIEW 2018

THERE'S MORE TO MURPHY



Improving life by delivering world-class infrastructure



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WELCOME TO MURPHY

Delivering world-class infrastructure safely and efficiently is at the heart of everything we do. Infrastructure often goes unnoticed, but it is the vital building block in our everyday lives.

As we expand our capabilities and strengthen our relationships, our people and 'One Murphy' approach remains central to our self-delivery model. This model is evident in the projects we work on, the people we employ and the communities in which we operate.

In this review, we reflect on the challenging times of 2018, our stable outlook for the next year and our commitment to our people and culture at Murphy.

We sharpened our focus on our core sectors. From our northwest electrification projects and HS2 joint venture in rail, to leveraging our expertise in water and wastewater from north London to Ireland, our teams continued to deliver for our clients.

After all, there's more to Murphy than 65 years' expertise; more than self-delivering plant, people and equipment; and more than a united workforce working as 'One Murphy'.

There's more to Murphy...

MURPHY AT A GLANCE

Murphy is a leading global, multi-disciplined engineering and construction company founded in 1951 that improves lives by delivering world-class infrastructure.

Operating in the United Kingdom, Ireland and Canada, Murphy provides a range of services to sectors including transportation, water, power, natural resources and construction & property.

Headquartered in London, the company also has a number of related businesses; Ground Engineering, Murphy Process Engineering, Utility Connections, Murphy Plant and Urban Infrastructure.

We directly employ more than 3,500 engineers, professional managers and skilled operatives around the world. We have specialist expertise in delivering pipelines, process engineering, design, marine, structural steel, tunnelling, fabrication, bridges and piling, and we invest heavily in our substantial holding of plant, equipment and facilities.



WHAT WE DO

Transportation

From building and maintaining new infrastructure to responding to emergencies, our range of vital transportation services help keep our societies moving. We bring innovative solutions to complex problems in the rail, highways, aviation and port sectors. Working with the likes of Crossrail, HS2, Network Rail and Transport for London (TfL), our skills in pre-construction, project management and supply chain management help us deliver major programmes of work, while our self-delivery capability sets us apart from competitors.



Transportation

Power

Our team provides cost-effective, innovative and integrated solutions that strengthen the electricity network, vital in keeping the lights on and the power flowing. From the design and build of substations to installing large cable management systems in deep tunnels, underground and overhead line projects on renewable energy schemes and operational rail infrastructure, our expertise is integral in meeting the UK's energy needs.



Power

Water

We provide world-class water and wastewater services, focusing on treatment plants, reservoirs, pumping stations, tunnelling, pipeline networks and the construction and renovation of water mains. We are also proud to offer fully integrated design, build, operation and maintain capabilities, as well as process engineering expertise, plant performance advice and in-house fabrication and testing services. Using innovative solutions in 2018, we supported clients including Thames Water, Bristol Water, SES Water, Yorkshire Water, United Utilities, Irish Water and Northern Ireland Water.



Water

Natural Resources

We have a long history of providing innovative solutions to onshore and offshore oil, gas and energy infrastructure and assets. Embracing our 'One Murphy' and self-delivery approach, we offer comprehensive capabilities in consultancy, design, maintenance, modifications and new-build to decommissioning in the oil, gas and energy markets both within the UK and internationally.



Natural Resources

Construction & Property

Our comprehensive services support ambitious new-build projects, complex conversions, and joint-venture developments and refurbishments. We work collaboratively with private developers, investors, landlords, local authorities and residential providers to deliver end-to-end services using our unique 'One Murphy' approach. We provide the expertise, equipment and people to combat any construction and logistical challenge on even the most difficult sites.



Construction & Property





International

Our Canadian joint venture, Surerus Murphy, constructs large-diameter pipelines throughout Western Canada, focusing on key oil and gas projects in Alberta, British Columbia and Saskatchewan. In Ireland, Murphy International Limited offers expertise in civil engineering, structural steel fabrication, piling, construction, process engineering for water and wastewater on design-build and design-build-operate contracts.

Ground Engineering

Our in-house specialist piling and ground engineering business delivers a range of piling and geotechnical techniques throughout the UK and Ireland. Offering in-house pile design, value engineering and bespoke technical solutions, our direct delivery specialist team ensures our clients receive a reliable and adaptable service.

Murphy Plant

With a fleet value of over £100 million, Murphy Plant manages and maintains a substantial holding of plant and transport equipment. Our ownership of plant and transport provides us with considerable flexibility and the ability to mobilise quickly to accommodate clients' needs. We have a vast inventory of over 15,000 assets including excavators, dumpers, cranes, compactors, piling rigs, tunnelling and pipeline equipment.

Urban Infrastructure

We are a contractor of choice for hard landscaping, security and street furniture, particularly in central London. Our Urban Infrastructure team offers a range of front-end enabling services, which successfully gets projects off the ground.

Utility Connections

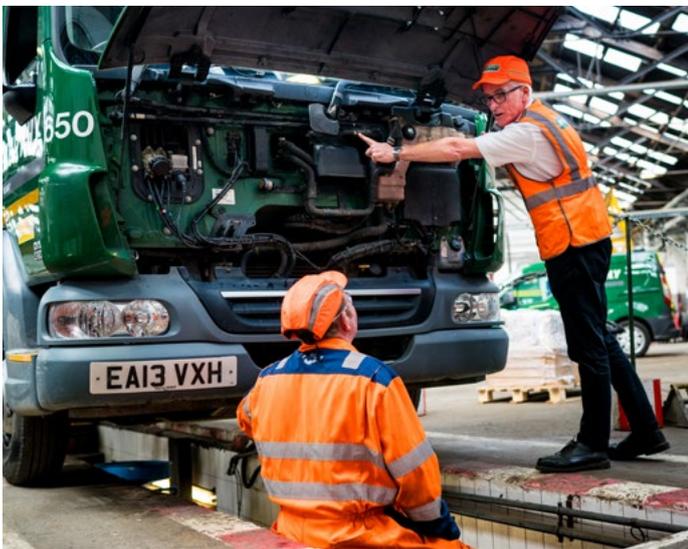
We offer a unique one-stop solution that connects gas, power, water and telecommunications for residential and commercial developments. Our clients include Persimmon Homes, Redrow Homes, Barratt Homes and Taylor Wimpey, as well as industrial and commercial developers such as St. Modwen. We have also become an Independent Gas Transporter (IGT) and Independent Distribution Network Operator (IDNO), allowing us to own and operate electricity and gas networks.

Pipeline Testing Services (PTS)

PTS is a specialist business that conducts a wide variety of pipeline pre-commissioning, commissioning and integrity management services. We offer services including swabbing, hydrostatic and pneumatic pressure testing, desiccant drying, leak testing, leakage detection, chlorination, in-line inspection, pigging, cleaning and remedial works.

Specialist Welding Services (SWS)

SWS provides support to the energy sector in the UK, Ireland and Canada by providing welding, fabrication and piping solutions. Our services include welding engineering, inspection, non-destructive testing (NDT), and technical authority consultancy across the sector.



CHAIRMAN'S STATEMENT

There's more to Murphy

Our strength lies in the Murphy business model, and the people and values that underpin everything we do.

In 2018, we continued to make progress to consolidate those strengths, while at the same time delivering across the breadth of Murphy for our clients.

Challenging times

What the past twelve months have clearly shown us is that the challenges facing the engineering, infrastructure and construction sectors are very real. Political uncertainty, project delays, financing challenges and project losses have clearly and very severely impacted some of those around us.

For us at Murphy, these are challenges we are only too aware of. A strict adherence to corporate governance, controls and risk management is essential. We have been consolidating our work on risk analysis and management throughout the year, to make sure we have a structure that protects the company and its people, and at the same time, can deliver world-class infrastructure projects for our clients.

We need to choose the right projects for the right clients, ensuring we can earn a fair return and deliver a project in the right way which aligns to our values.



Sustainable growth

Our aim, as we do this, is to build a resilience across Murphy to weather any challenges we may face. Our long term strategy, to become a prime contractor working across a number of sectors, remains the same. But we won't go chasing growth at any cost. Our aim is to build and strengthen a business that has sustainable, long-term growth.

In 2018, we continued to focus on developing our assessment of internal and external risks at all levels of the business. Our risk committee specifically developed an approach to rigorously assess uncertainties – such as Brexit – so we can continue to grow yet feel confident we have the appropriate prudent risk controls in place.

Solid and stable outlook

The Murphy family continue to support the long term strategy of the business, with a commitment to continue building on our legacy of self-delivery. Having that long-term view gives us a stability that we can – and are – building on.

Whether that applies to our drive for new and innovative working practices, or our aspiration to make Murphy the employer of choice for a diverse and talented workforce of the future, we believe it is the right one that gives us a competitive advantage.

I'm positive that despite a challenging external environment, the company is in good hands and has a solid bedrock on which to continue delivering world-class projects for its clients for years to come.

A handwritten signature in dark ink that reads "Alastair S. Kerr". The signature is written in a cursive style and is positioned above a long, horizontal, slightly wavy line that extends to the right.

Alastair Kerr
Chairman

CEO'S REVIEW

The right direction

In my first full year leading Murphy, 2018 has seen us take significant steps forward in developing a successful and sustainable business. From our projects to acquisitions, and from our innovations to recruitment, across the board we have invested and delivered to make Murphy a truly great place to work.

In a challenging and often uncertain economic climate, we took steps to reinforce the solid foundations already in place. As well as winning and delivering projects, we continued to invest in our people and the processes needed for a company of our size.

Operations

Our drive to deliver world-class infrastructure safely and efficiently is at the heart of all we do. This means helping our clients deliver the best services they can for their customers and communities.

We have a crystal clear focus on the sectors in which we operate. Across all five of those sectors, 2018 saw us deliver projects I am proud to have seen us involved in. From our northwest electrification projects and HS2 joint venture in rail, to leveraging our expertise in water and wastewater from north London to Ireland, our teams continued to deliver for our clients.



Christmas 2018 saw our busiest holiday period ever, delivering 17 rail projects on time and safely, without any accidents or incidents.

Our work in the power sector took a significant step forward, as we acquired Carillion power and integrated them into the Murphy family. With it came a significant project in the shape of the Richborough to Canterbury overhead line project, which I'm proud to say we delivered on time, despite the challenges faced by the team.

In natural resources, we completed the £10m Erskine Bridge gas pipeline crossing near Glasgow, and started work on two high pressure gas pipelines at Harefield. Both projects used our applied engineering expertise to provide the right solution – an area I'm delighted to see develop to help us offer more sophisticated solutions to our clients.

Our Construction & Property team continued to create places for communities to live, learn and work. We delivered two significant projects in Dalston Lane and the Institute of Physics, and secured places on two new housing and regeneration frameworks.

Supporting all this work is one of the unique facets of Murphy – our specialist capabilities. From Plant, Ground Engineering, Fabrication, Urban Infrastructure, Welding and much more, the breadth of what we offer supported by our own people is what puts us in a unique position.



New business, new contracts

We also grew our business, adding more strength and depth to our offering, while winning contracts with new clients.

Supplementing our existing skills and offers is one of our main aims. Building on what we already do and do better than anyone else is where we will succeed in the future.

We won some significant contracts in 2018 that continued into 2019. CP6 Anglia route for Network Rail; Hinkley and Barking for National Grid; North Bristol Relief Sewer for Wessex Water; and a new treatment and energy recovery plant for Yorkshire Water are just some of the highlights. The year was a positive combination of building on existing relationships, as well as starting work with some new clients.



Our people

As we embark on those journeys, our people remain central to the Murphy self-delivery approach. Our clients, new and old, benefit from teams that are embedded into the Murphy way of doing things and align to our five core values.

I recognise that attracting and retaining a diverse range of talent into the sector is a challenge. But we must strive to be an employer of choice if we want the best available talent contributing to our future success. We must invest in our people and give them sustainable careers, not just jobs.

We achieved a lot in 2018 to continue this journey – our culture development programme, safestart matrix, project leaders' development programme and quarterly learning campaigns amongst others.

On top of all that, I'm proud that we also had our safest year ever with a world-class lost time injury rate – one we are committed to continue improving.

With a heritage of family values and a self-delivery approach, I am confident that there is still more to Murphy that will grow and help us continue delivering world-class infrastructure that benefits the communities in which we work.

A handwritten signature in green ink, appearing to read 'John Murphy'.

John Murphy
Chief Executive Officer



OUR STRATEGIC VISION

Our sustainable growth plan gives us focus on our growth, the sectors where we work, and how we will invest in our people and capabilities to get us there. That is underpinned by our drivers and our values, ensuring we continue to deliver world-class infrastructure for our clients.

OUR STRATEGIC DRIVERS

We have introduced our strategic drivers to provide a clear focus for the coming years on where we need to improve.

Each driver has an executive lead, and covers a range of improvements in that area. All our strategic drivers have been put in place to address the challenges we face today and to set us apart from the crowd in the future.

DEPENDABLE PROJECT MANAGEMENT

Effective planning, execution and review of project delivery

WIN-WIN RELATIONSHIPS

Actively develop trusted relationships with our customers

PASSIONATE ABOUT DIRECT

Make best use of all of our capabilities to stand out from the crowd

BETTER ENGINEERED

Provide solutions that are smarter, safer, faster, and right first time

FIT TO START

Nothing will start until we are properly ready and fully prepared

OUR VALUES

HOW WE WORK

Our values underpin everything we do - from our biggest project to our smallest office, everyone at Murphy works and behaves in line with our values.



ONE FAMILY - ONE TEAM - ONE MURPHY

Collaborative working gives our clients a seamless, integrated service



ALWAYS DELIVER

A 'can do' attitude delivers high quality projects on time and on budget



NEVER HARM

We look after people, their communities and the planet - no matter what



CONTINUALLY IMPROVE

Innovation is integral to our success



INTEGRITY AND RESPECT FOR ALL

Transparent, honest and professional - we act with integrity, embrace diversity and our stakeholders trust us

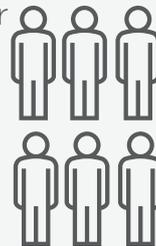
OUR PLAN



Deliver 'One Murphy'



Reinforce our values to our people as an integrated, open and collaborative business



Become an established prime provider in our five core sectors of water, power, transportation, natural resources and construction & property

Increase our investment activities



OUR PEOPLE, CULTURE AND VALUES

We are proud of what we do, and the commitment we have to our values and the 'One Murphy' ethos that drives our inclusive culture. As we deliver world-class infrastructure for our clients, it's vital we continue to develop new ways of working safely and sustainably, and protect the communities in which we work.

To continually improve and develop our successful business, we have to train, engage and develop all our brilliant people across the company. In 2018, we took further steps in ensuring every Murphy employee has the opportunity to fulfil their potential.

Becoming an employer of choice

In 2018, we continued to embed a new People agenda, focused on acquiring, developing and retaining talent. This is already helping us on our journey to become an employer of choice.

We introduced a new learning methodology and online curriculum to enable all our people to own and drive their development and careers.

Meanwhile, business partners from our People team are now embedded alongside

each of our business leadership teams, and a shared service centre is available to provide support and advice to all our people when they need it. New online people and performance management tools were also introduced - future-proofing our processes and streamlining our recruitment activities.

Cultural Development Programme (CDP)

Our in-house Culture & Engagement team connected with over 6,000 employees across Murphy, our joint ventures, supply chain and clients.

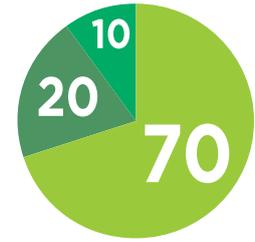
We enhanced our CDP, which is designed to empower employees to live our five core values. A new Culture & Engagement one-day induction was also successfully piloted and launched in 2018, which fully inducts new starters into the heritage and close-knit culture of the business.

The team visited 253 of our sites, collaborating with our SHESQ teams to successfully deliver our seasonal 'One Summer' and 'One Winter' safety campaigns, and supported the delivery of several roadshows.

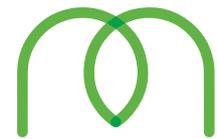


Key achievements

- A new learning portfolio has been introduced to enable development opportunities for all employees. It's built on the **'70, 20, 10'** methodology (70% learn as you work, 20% learn from others and 10% formal learning). This is supported by the Learning Zone, which is an online learning portal containing hundreds of development solutions from videos and guides to full online courses
- A **'Safestart'** skills matrix was created to improve technical skills. 12,322 technical training, professional and employee development courses have been completed. In rail training, 22 safety critical courses were delivered to 875 delegates
- **Quarterly learning campaigns** on a topical business challenge have been implemented, including monthly online 'espresso' sessions
- **A targeted development programme was launched** with 206 project leaders attending a conference and 108 given tailored training, to help them with their personal development and business awareness
- Our **recruitment and onboarding process** has been streamlined and we have introduced several new induction programmes to enhance our new starter experience
- **75 mental health first aiders**, who are embedded in the business, have been trained and mental health awareness sessions have been introduced to support all our employees
- **We enhanced our Emerging Talent strategy**, recruiting 24 graduates to join a new graduate development programme, as well as launching 20 internships and recruiting 14 apprentices (32% of whom are female). A new process to identify and develop our internal talent was also implemented
- **Murphy's Pride Network** was launched, helping us to develop an even more inclusive company culture
- **New management and leadership development programmes** were implemented to continue to invest in our line managers' capability, with 88% saying they would recommend the programmes to others
- Our employee engagement survey revealed a very positive **engagement score of 84%**



2018
S A F E S T A R T



MHFA England



One Summer Session on our Triton Knoll project



York supply chain event - discussing our Never Harm value

HEALTH, SAFETY & SUSTAINABILITY

Never Harm

2018 was a busy and successful year for our health and safety champions, as we continued to bring our Never Harm ethos to life.

It began with 'Safestart 2018 - Stopping Time', which was a coordinated initiative held across all projects and offices in the first week of the year. It involved a short film that depicted a near-miss incident on one of our own rail projects, and highlighted the steps needed to prevent future incidents occurring. Our senior management team was on hand to lead the events across the business and engage with our people, to ensure we were fit to start and refocused on delivering our 'Never Harm' value.

Huge strides were made in mental health and wellbeing. We undertook our first 'Workplace Stress and Wellbeing' survey in April, which is already helping us to improve employee work-life balance. We also joined Mates in Mind, a charity that helps businesses to address mental health issues. Furthermore, we were delighted to train 75 mental health champions, and 100 managers in mental health awareness.

Elsewhere, we introduced 'Simple Actions', a campaign that aims to clearly articulate steps employees can take every day, on every project, to protect people and the environment. 2018 also saw the continuation of our 'One Summer' and 'One Winter' campaigns, which help employees to fully understand the consequences of workplace incidents in a fun and interactive way.

Finally, some great health and safety innovations were implemented in 2018. We rolled out REACTEC Hand Arm Vibration monitoring devices to all relevant sites, which subsequently won us an excellence award for safety from CECA in Ireland. We were the first contractor in the world to utilise Leica cable avoidance tools, which use SMART technology to identify underground assets faster, more accurately and therefore more safely.

We also introduced air shovels, which assist in root investigation and excavation around buried services. The success of these new tools are highlighted by our Agility Alliance project team, who achieved a 60% reduction in service strikes compared to last year.

A safer business

We want to ensure we maximise any learning opportunities as a result of incidents and close calls. In 2018, we invested in our people by training a number of our project management and leadership teams in accident investigation techniques. This has meant they can independently support investigations across the business and ensure any lessons learned are captured and shared.

Improving our investigation capabilities and post-incident review processes has enabled us to mobilise our teams more quickly. In turn, this has improved the speed with which we are able to report and analyse the causes of serious incidents. By effectively communicating key learnings and taking appropriate actions, we are continually improving on our journey to 'Never Harm'.

Key safety highlights

- Lost Time Injury Frequency Rate was 0.26, representing continuous improvement (0.36 in 2016, 0.32 in 2017)
- Safestart launched in early 2018, with excellent attendance across the business
- Innovations such as Hand Arm Vibration monitoring devices and Leica cable avoidance tools implemented
- Simple Actions campaign introduced across the business
- Mental health and wellbeing addressed through company-wide survey and 75 champions being formally trained
- Joined 'Mates in Mind' mental health charity

Pioneering sustainability

2018 saw the introduction of a new environmental sustainability strategy. The strategy sets a clear, three year plan to reduce on-site risks, improve our impact on climate change and reduce our operational emissions.

Subsequently, we launched our new Environmental Engagement Campaign and our 'One Murphy, One Planet' campaign. This is an engagement programme that seeks to educate our employees on their everyday impact in the context of global environmental challenges. This is closely linked to our highly successful 'Espresso Sessions', which dealt with more specific issues such as plastic, biodiversity and our contribution to a circular economy. These engaged more than 350 employees over just three months.

We continued our ten year carbon reduction journey, successfully reducing our emissions for the ninth year in a row with a 23% reduction in emissions intensity (tCO₂e/£million revenue) against our 2009 baseline. We also became signatories to the 'Waste to Wealth' commitment, led by Business in the Community. Meanwhile, our environmental incident reporting increased by a huge 61% - which is an indication of an improved understanding of environmental issues, rather than a reduction in performance.

We continued to make progress on our waste reduction strategy, rationalising the way we deal with waste as a business to maximise value for our clients, and minimise impact on the environment. We successfully diverted 98% of waste from landfill and are setting stretching targets around our key waste streams for the coming year

We made headlines with many outstanding innovations. One of the key developments was the use of cleaner burning Gas-to-Liquid fuel, making us the first UK construction company to use it. We also installed electric car charging points at all of our offices, and started using hybrid power points on many of our sites, which can automatically switch from diesel to internal batteries according to power demands.

Finally, in terms of social sustainability, we partnered with the charity CRASH. They are a unique charity that aids homelessness through construction projects. CRASH support other charities when they face construction challenges, and we are delighted to offer them our expertise and resources.

We are also very proud of the money we've raised for our chosen charities in recent years. Having raised £150,000 for GOSH and Macmillan between 2016 and 2018, we've also raised £40,000 for CRASH since June 2018. This included our 'travelling treadmill', which saw over 600 miles and £1,200 accumulated across our offices in Golborne, Stonecross, Cannock, Leeds and London.



Sustainability highlights

- 23% reduction in carbon emission intensity - ninth year of carbon reductions in a row
- Sustainable innovations like becoming the first UK contractor to utilise Gas-to-Liquid fuel on a project
- Environmental Engagement Campaign introduced - including 'One Murphy, One Planet' and 'Espresso Sessions'
- Became signatories for 'Waste to Wealth'
- Partnered with CRASH - a charity lending construction help to homeless charities and causes

ENGINEERING, INNOVATION & DIGITAL CONSTRUCTION

Engineering a smarter future

2018 was a notable and significant year for engineering at Murphy. The launch of our strategic driver, 'Better Engineered', brought about significant improvements across the function, while transforming the way in which we win our projects.

As well as continuing to develop our core engineering capability we also saw our Quality Control, Digital Construction and Document Control teams join the function. This new and more digitally enabled family is combining not only to make us better at tackling the project challenges we face, but also deliver value to the group and our clients.

Winning smarter

Our key strategic driver has been 'smarter solutions', which has been influential in building a strong order book in 2018. The most important and successful aspect has been being 'fit to start' on every bid; mobilising the right team, selecting the correct partners and fully understanding the client's requirements before we begin the tender process.

A collaborative working group then brings this all together to create a solution that exceeds client requirements while delivering profit to the business. We are rightly proud of the expertise that supports this effort across our engineering disciplines, which continues to go from strength to strength.



Imogen Graves, assistant design manager on LM-JV, won the ICE's Pitch 200 challenge

Applied engineering

The role and influence of Murphy Applied Engineering (MAE) developed greatly in 2018.

MAE is an in-house, independent design team that is consulted by Murphy businesses as well as external clients. Its engineering and design expertise is outstanding, and has become a hugely valuable asset on complex projects and competitive tenders. MAE mobilises quickly, and is at the heart of how Murphy, can offer clients better engineered solutions to their problems.

Elsewhere, we're extremely proud of our professional development programme, which enables our engineers, technicians and quality professionals to expand their skills. We now run accredited training schemes for ICE, IMechE and Engineers Ireland together with a pending accreditation with IET, which will cover all of our key disciplines. 2018 saw more than 20 people gain professional engineering qualifications, with another 170 to follow, all supported by an approved network of Murphy mentors.

Nurturing engineering talent

We launched our new graduate and degree apprentice programme to support our emerging talent agenda. We welcomed over 25 new starters into these programmes last year, who will be rotated throughout the business to gain a broad understanding of engineering. This supports them to meet the requirements for professional qualification.

Our emerging talent continues to impress with two of our young engineers winning prestigious awards. Jessica Lea, a civil engineering apprentice, was announced as the Apprentice of the Year for England North West region and was one of two runners up for the CITB National Apprentice of the Year. In addition, Imogen Graves, assistant design manager on Laing Murphy Joint Venture (LM-JV) won the ICE's PITCH 200 contest toward the end of 2018.

Proudly going digital

Following our independent Business Information Management (BIM) certification in 2017. We continued to embrace new digital methods of working to meet client demands and bring internal efficiencies.

In 2018 we merged the digital team and document control community with engineering, making it the largest function within the group. Last year also saw the deployment of a group-wide common data environment through Aconex, complimented by ProjectWise. These have been vital in improving the way Murphy teams, clients and contingent staff access, create, share, process and archive information on every project, permitting secure access to the right information.

Deploying Aconex for our BIM and security-minded client, Defence Infrastructure Organisation (DIO), at the Gosport Oil Fuel Depot Redevelopment Project was a huge stamp of approval for the investment. It is also a clear example of how our strategic investment in digital technology will become an increasingly important platform for the administration and execution of our projects.

Furthermore, we were shortlisted for 'Digital Transformation of the Year' at the Digital Construction Awards due to the launch of our internal BIM training courses and virtual reality safety induction environment.

Engineering, innovation and BIM highlights

- Bringing Quality Control, Digital Engineering and Document Control into Engineering function
- Supporting over 40 project bids from multi-year framework wins to substations, tunnels, buildings and cross country cables
- Launching our degree apprentice and graduate programmes
- Strengthening our design management capability and systems
- Increasing our capabilities and services in MAE to deliver in excess of 170 projects
- Running training schemes for ICE, IMechE and Engineers Ireland, together with supporting IET, IStructE and IChemE candidates
- Deploying Aconex and ProjectWise across the business, creating more collaborative and smarter digital solutions



TRANSPORTATION

Bolstering our networks

Our Transportation business works across rail, highways, aviation and ports, helping to solve the UK and Ireland's most complex Infrastructure problems. From supporting major national projects like Crossrail and HS2, to responding to emergencies in every corner of the UK, our 'One Murphy' approach continues to set us apart.

For 2018, our aim was all about building new relationships as well as strengthening existing ones. It was another big year for HS2, as we were ready to play our part by carrying out work at various sites with our joint venture partner Laing O'Rourke.

Throughout the year, we wanted to continue to innovate. This meant engineering innovations needed to overcome challenges, powered by our in-house experts - but also process innovation to maximise efficiency in everything we do.

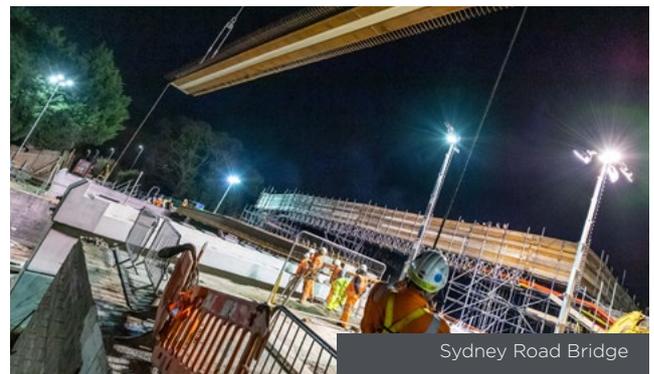




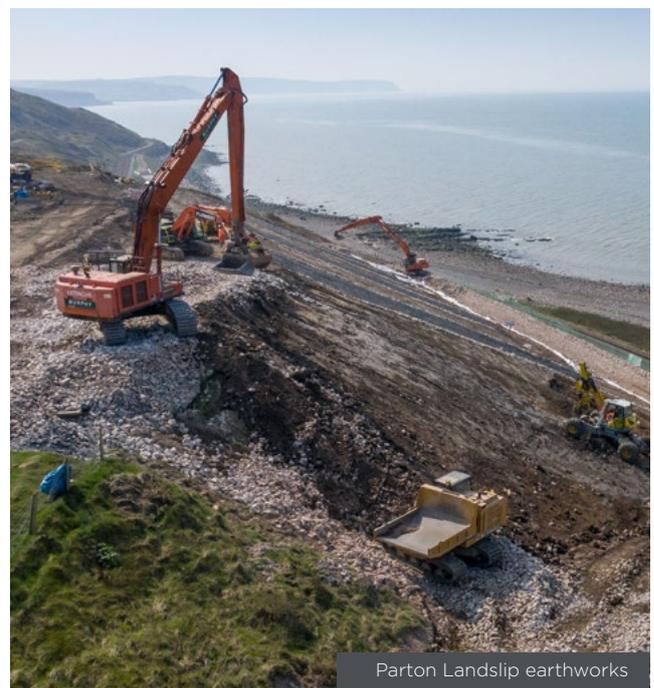
Leeds Liverpool Canal Bootle

Transportation highlights

- Awarded the Anglian section of Network Rail's CP6 Framework, worth around £400m
- Secured a contract on the East West Rail early work project, which is a joint venture with VolkerRail, Atkins and Laing O'Rourke
- Renewed London North Western (LNW) Framework contract with Network Rail for a further two to three years
- Dozens of other projects undertaken and completed for Network Rail across the UK, including preparatory work for HS2
- Completed our busiest Christmas on record, with 17 Network Rail projects finished without any accidents or incidents
- Established partnership with world-leading technology to create Smart PPE, possession management GPS and use of AI - all to build a safer, more efficient and more sustainable business



Sydney Road Bridge



Parton Landslip earthworks

A new £400 million framework

Following a truly world-class bid from the team, we were delighted to be awarded the Anglian section of Network Rail's Control Period 6 (CP6) Framework, worth around £400m over five years (2019-2024).

The multi-discipline framework involves projects of varying value, including stations, buildings and civils, electrifications, power, signalling, telecommunications and track. This is initially in place for a five-year period but three one-year extensions are available if required. Given that earning a place on CP6 was the primary aim for the year, this was a fantastic achievement for Transportation.

We were also delighted to be awarded an earthworks framework on the East West Rail early work project, which is a joint venture with VolkerRail, Atkins and Laing O'Rourke. This contract extends our transportation footprint even further across the UK.

Elsewhere, our London North Western (LNW) Framework with Network Rail was renewed for a further two to three years. We've been working on LNW for many years and this extension is a seal of approval for all the work we've done so far.

Our involvement in the HS2 project continued to make good progress in Birmingham. We are now nearing completion of the design phase and work started on the enabling works over a 40km area. These works will continue until late 2020.

2018 also saw us begin complex works on four station upgrades in West London for Network Rail – all "Access For All" (AFA) and Crossrail compliant. The team worked to incredibly tight deadlines and in very congested stations. This work included us successfully delivering a high profile staircase at Ealing Broadway station – something other contractors had failed to achieve.

Work across the team continued during Christmas 2018. It was our busiest Christmas on record as we completed 17 separate projects, all without any incidents or injury. Over 250 people made this possible by working over the Christmas period.

Overall, with new frameworks secured, others extended, and a record number of projects delivered, 2018 has been a huge success for the Transportation team.

Tech-driven innovation

In 2018, we started to work closely with world-renowned technology providers on Smart PPE (digitally-enabled equipment that protects against health and safety risks), possession management GPS and the use of artificial intelligence.

The development of these tools and innovations are vital to our progress. Firstly, it can reduce paperwork and automate processes that will make us more efficient. Secondly, using data intelligently can transform the way we handle safety issues; by analysing historic data, we can potentially predict future accidents more accurately. Ultimately, we believe that our strategic driver to 'Never Harm' demands the innovative use of technology and data – and our partnership with Smart PPE is driving that forward.

We have also introduced an automated E-Pic system to our rail safety critical personnel on site to drastically reduce our paper requirement. This too is a simple but powerful step in the right direction.



Meadow Lane

Phase 3 of National Rail Electrification

Among our numerous projects for Network Rail in 2018, we were appointed by the principal contractor VolkerRail to carry out a range of work as part of the North West Electrification project. This project comprised 17 miles of line foundation, platform demolitions, station remodelling, new platforms with a new “AFA” station at Kirkham, and new footbridges.

At Blackpool station, it was a particularly challenging project for a number of reasons. The water table was unusually high and the weather was exceptionally wet, which made the construction of the foundations difficult. Meanwhile, some 400m² of asbestos was found and removed from platforms, which necessitated the prompt engagement of relevant specialists.

All of these problems were efficiently overcome, as the project developed with remarkable consistency. Some 50,000 tonnes of spoil and hardcore were removed from the site to make way for new platforms, while over 1,200 riser wall units were installed across the new platforms. To limit rail and project interruptions when platforms were remodelled, we implemented intelligent line open controls.

The fact the project was still completed within the allotted timeframe and on budget was a fantastic advert for Murphy. Better still, the project was RIDDOR free with no accidents or incidents. Network Rail issued a prestigious STAR award for the project because of the safety and quality of the site.

At Kirkham station, we installed a new footbridge and associated lifts as part of the national “AFA” programme. The footbridge and lift shafts were all fabricated by Murphy International in Ireland. In addition, we installed 1,200 OLE foundations using in-house resource and Murphy Plant rail equipment, perfectly demonstrating our ‘One Murphy’ approach.



Murphy team on completion of the project



Station remodelling at Blackpool North Station



On site at Blackpool North Station



Murphy team at Kirkham station

POWER

Energising our markets

The Power team provides cost-effective, innovative and integrated solutions that strengthen the electricity network.

We have established ourselves as a leading contractor for onshore cross-country cabling, on both renewable energy schemes and interconnector cable projects. We have developed our substation business to enable us to provide a design and build service for transmission and distribution projects. Our Power team also has the in-house expertise to install large cable management systems in deep tunnels, and operational rail infrastructure.

For 2018, our business had three key objectives. Firstly, we wanted to grow our substation team in order to take advantage of several new opportunities with our clients. Secondly, we wanted to continue to position ourselves as the go-to provider in upcoming national distribution projects. Then thirdly, we aimed to improve and innovate by taking clearer lessons from the major cross-country cable projects we have undertaken in recent years.

Fundamentally, we aimed to grow the business by strengthening existing relationships and establishing new ones – all with the unrivalled backing of our 'One Murphy' capabilities by directly delivering the people, plant and expertise needed to make projects a success.





Triton Knoll, drone footage

Power highlights

- Landmark Richborough to Canterbury overhead line project completed on time
- Hornsea project cable installation finished ahead of schedule and shortlisted for an award
- Development Consent Orders on the £100m Triton Knoll project completed and construction of the main work commenced
- Contract award secured with National Grid for the Hinkley, Braybrooke and Barking substation projects and with UK Power Networks for the Wimbledon substation
- Huge range of innovations introduced and recorded on the Hornsea project for future use
- 17,745 individual maintenance and fault repair jobs completed for Northern Powergrid



Richborough to Canterbury OHL Project

Seizing huge opportunities

In 2018, we expanded our portfolio with a number of successful contract wins. We were awarded contracts with National Grid for the Hinkley, Braybrooke and Barking substation projects. The team was also awarded the Wimbledon substation contract by UK Power Networks.

Furthermore, we made progress on the Civil Engineering Services framework contract with Northern Powergrid, completing some 17,745 individual maintenance and fault repair jobs.

We also acquired Carillion's power business after it fell into liquidation. This presented a huge opportunity for the Power team, but with this opportunity came significant challenges.

As a result of the acquisition, we became a Tier 1 contractor in substations, new-build cables and overhead lines for National Grid. We consequently inherited the significant Richborough to Canterbury 400kv Overhead Line project. For many reasons, completing this project on time and on budget in November 2018 was a huge achievement for Murphy.

In 2018, the Power team had a major role in three different projects attached to the NEMO interconnector project. This included the NEMO Converter Station for Siemens, which was shortlisted for a Construction News award for its excellent health and safety performance.

Another significant achievement was the successful discharge of the relevant onshore Development Consent Orders (DCO) requirements on the Triton Knoll electrical system - which is currently the longest cross-country cable connection ever constructed in the UK. It's part of the wider Triton Knoll Offshore Wind Farm development, and our preparatory work involved a wide array of complex stakeholder engagement. Typically, DCO are approved before the project is passed to us - so its successful progress proved our ability to go above and beyond for our clients. The entire project is worth £100m to Murphy.

Elsewhere, we completed the landmark Hornsea project to an accelerated timescale. In the end, we installed the remaining 148.5km of cable in just 22 weeks without any quality issues or safety incidents.

A year of innovation

Innovation was pivotal to the success of the Power business in 2018 - and this became most apparent as we completed the Hornsea project.

The project team undertook an in-depth examination of the main activities associated with the civil and cable installation work, not only to improve the project but to implement and record meaningful innovations that could be used in future projects.

Our client on the project, Ørsted, fully supported our ambition to innovate and played a key role in the success of embedding the new activities. The innovations were framed around four key project areas: cable logistics, trench installation, cable installation and sand installation.

In cable logistics, a reach stacker, bespoke drum lifting frame and a cable drum trailer were created to avoid using a crane and to take cable drums directly to the point of installation. These innovations reduced our crane requirements by 190 days.

These cost-saving and productivity-boosting innovations continued in all areas. Through innovation and process refinement, our teams excavated 1,500m of trench, installed cable surround, directly laid three 220kV cables and reinstated the trench within four days. For trench installations, our innovative processes minimised waste and improved production from 100m per day to 600m per day - a remarkable increase. Similarly, in cable installation our new triple cable rollers helped to increase quality and reduce the number of times cable was handled by 66% - which in itself ensured no damage on installation.

The new process provided quality, programme and health, safety and environmental benefits to the project. The project was subsequently shortlisted for the prestigious Construction News Award for Innovation.

Elsewhere, we used drones for the first time on the Richborough project. Access to the site was difficult, so drones were used to record videos and assist with planning and construction sequencing. Progressive innovations like this are something Murphy is becoming renowned for.

Richborough to Canterbury Overhead Line Project

The Murphy-Eltel joint venture project constructed 20km of new overhead electricity cable between Richborough and Canterbury.

The project, inherited as part of the Carillion Power acquisition, was a significant challenge. The target completion date was also brought forward to November 2018. The fact the project was completed on time represented a huge success.

“ The Murphy team successfully delivered the Richborough OHL connection project for key client National Grid in late November. The timely completion of the 20km line was pivotal to the energisation of the NEMO interconnector, linking the UK with mainland Europe and providing critical resilience into the UK energy network. ”

Andy Ingram
Murphy Project Director

The line now connects NEMO Link – a 1,000 megawatt undersea interconnector between Belgium and the UK – into the UK’s existing high voltage network. These investments will play an important role in supporting the security of energy supplies across the UK and Europe.

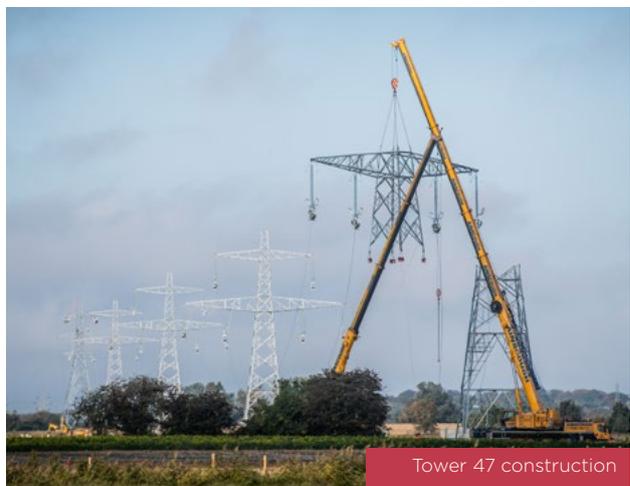
The new line, consisting of 60 new pylons, was the first to be built in the UK for 25 years. A total of 260km of high voltage conductor was installed. The construction work, carried out by 250 skilled workers at the peak of operations, involved more than 6,000 crane lifts and a route that crossed eight roads, three rivers and three rail lines in its journey across Kent. From the drones used in planning, to the various innovations used in conductor installation, this was a project that showcased the very best of Murphy Power.



Insulator platform



Tower 47 construction



Tower 47 construction



Temporary bridge lift

WATER

Continually improving our business and our industry

Murphy is a highly experienced and established provider of water and wastewater construction and engineering services throughout the UK and Ireland. Our end-to-end capabilities serve many major water and sewerage companies and water only companies across the UK and Ireland.

For 2018, our aim was to continue to develop a more sustainable and integrated water business throughout the UK and Ireland – with a bigger long-term footprint. More specifically, that meant pursuing key expansion opportunities with Severn Trent Water, Yorkshire Water, Anglian Water and South East Water in particular.

However, we also wanted to carefully select new opportunities while ensuring current operational performance was sharpened – which meant paying particular attention to the changing shape of AMP7 the water industry's Asset Management Plan period, which runs from 2020 to 2025.

We also remained focused on the continued amalgamation of the Murphy Process Engineering (MPE) business, which has vastly broadened our design and build water process engineering and contracting capabilities. Having helped to bring in new contracts in 2017, we saw even bigger opportunities in 2018 to expand MPE further into the UK.

Finally, we were determined to maintain a focus on innovation. We are proud of our ability to implement a range of project innovations, but felt that in 2018 we could go even further by presenting ideas that not only added value to our own work, but to the industry at large. Ultimately, we firmly believe that our quest to 'continually improve' refers to our industry as well as our own business.



Water highlights

- Awarded £45m contract by Wessex Water to construct the new North Bristol Relief Sewer
- Secured £41m design and build contract with Yorkshire Water to build a new sludge treatment/energy recovery plant in Huddersfield
- Infrastructure Alliance with Thames Water progressed successfully
- Deephams design and build project successfully completed and handed back to Thames Water operations
- Anchorsholme outfall project for United Utilities close to completion

“ Our focus at Deephams was to carry out the works with little disruption to the operation of the plant and its treatment capability, as it was kept live throughout the project. ”

Andrew Chappell
Murphy Project Manager

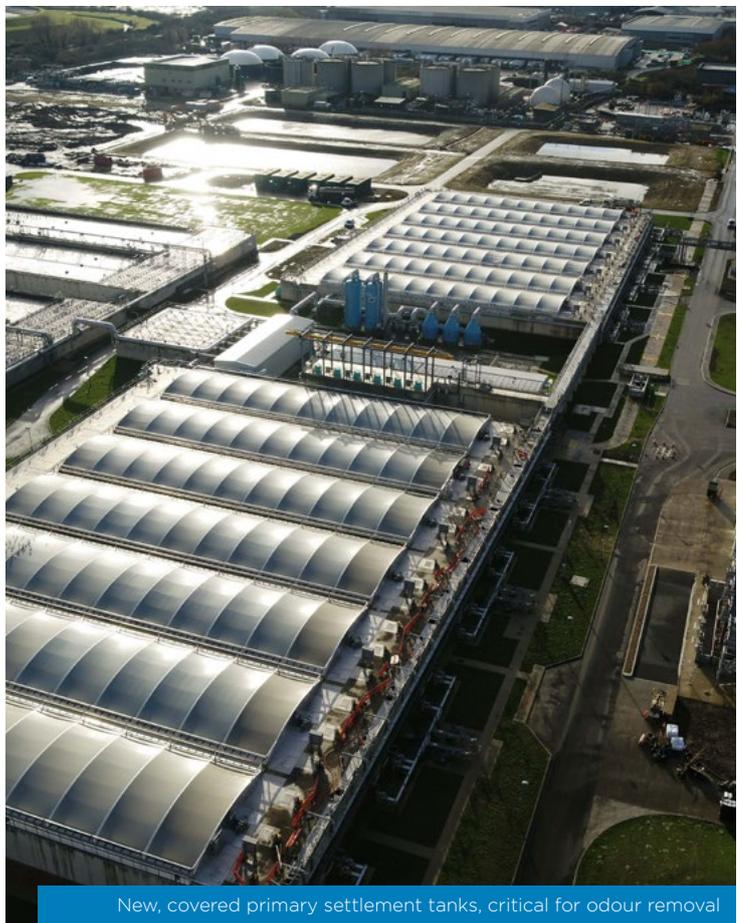
- New work pipeline strengthened with the addition of new clients
- Patent applications pending for iPAC – a fantastic tool that will monitor and analyse on-site water and wastewater activity in real-time
- Continuation of our work for Sutton & East Surrey Water (SES Water) on the AMP6 Trunk Mains Resilience framework, including completion of the Woodmansterne to Purley pipeline project



Pumping station at Deephams



Stream C removed, making space for future development at Deephams



New, covered primary settlement tanks, critical for odour removal

Extending our water footprint

2018 saw several key contract wins, but two, for new clients, stood out in particular.

We were delighted to officially secure a contract worth £45m with Wessex Water to construct the new North Bristol Relief Sewer. The work started in late 2018 and is due for completion in spring 2022. It comprises a range of challenges, including tunnelling under the M5, and will make good use of our in-house engineering expertise.

Our team also secured a significant £41m contract with Yorkshire Water to design and build a new energy recovery facility in Huddersfield. Construction began in November 2018 and will conclude in May 2021, with our integrated teams working together to deliver this important project.

In both cases, our 'One Murphy' approach was the key differentiator that enabled us to win the contract. Through our self-delivery model, we can offer clients genuine peace of mind because we deliver what we promise.

Meanwhile, our £50m per annum Infrastructure Agility Alliance contract with Thames Water continues to go from strength to strength. The contract currently runs until 2020 – the end of AMP6. We are in an excellent position to extend the contract and have built an increasingly strong relationship.

We handed Deephams Sewage Treatment Works back to Thames Water in 2018 too, having negotiated its various challenges and put it in a 'Fit to Finish' position. The project has again called on experts throughout Murphy, and was an excellent example of our 'Better Engineered' ethos.

2018 saw work progress on the AMP6 Trunk Mains Resilience framework for SES Water. The Burgh Heath to Nork pipeline, 2.1km of 500mm diameter ductile iron (DI), was completed in May 2018. We then started the Woodmansterne to Purley pipeline project in July, which consisted of 6.6km of 450mm diameter DI. Having successfully completed this scheme, we have now moved onto the third project, Blindley Heath to Outwood, which is set to complete in Q4 2019.

We're also nearing completion of the Anchorsholme outfall project for United Utilities. This project was delayed in 2017

due to adverse weather, so reaching a positive conclusion has been another great result for the Water team.

Alongside contract wins and progression, we've been working on some fantastic opportunities with other new clients and projects too. Our south east water portfolio is starting to grow, and we pitched for Severn Trent Water's Design and Build Framework for AMP7.

We're also working on opportunities with Anglian Water, Yorkshire Water, and even more projects with long-time partner United Utilities. Building this pipeline of opportunities has given the team some real momentum as we move towards AMP7 and even AMP8 in 2025.

Patents pending on game-changing innovation

In 2017, we worked diligently on our Works Performance Initiative (WPI), aiming to improve wastewater intelligence. That work continued apace in 2018, ultimately leading to a highly innovative breakthrough.

The result was iPAC – the Intelligent Performance Assessment Centre. It marks Murphy as leading the way in the field of wastewater treatment intelligent works performance assessment – achieved through the use of artificial intelligence, real-time analytics, machine learning and wireless sensor networks.

Murphy has been working with Microsoft on the development of iPAC, which can be delivered to site as a mobile solution and deployed in just 24 hours. The potential benefits to our clients are immense, from operating at the lowest unit cost of treatment while fully compliant with regulations, to delivering near real-time data that reveals true asset capacity, risks and opportunities.

The work progressed in 2018 and has led to two patent applications pending for both the system and the artificial intelligence, as well as full approval from the Water Research Centre (WRC). As hoped, this innovation has really defined what continuous improvement means for Murphy.

Belfast Wastewater & Treatment Works (WwTW) for Northern Ireland Water

Last year, we successfully completed a wide-ranging project for Northern Ireland Water to refurbish, upgrade and repair various aspects of Belfast WwTW.

The £5m project is one of many negotiated with Northern Ireland Water in recent years, and began in 2016. It's the largest asset within its portfolio, so getting this project right was essential.

The goal for our client was to create a variety of operational efficiencies, which meant several process and operational changes needed to happen on site. Refurbishment to substantial sections of this critical facility was carried out including repairs made to road surfaces, cabling, primary and secondary settlement tanks, while new scour pumps and discharge pipework were installed. Numerous other elements at the plant were refurbished, including the site's grit removal system.

We also designed, configured and commissioned a new SCADA system for the plant, which vastly improved the quality of information and control for the client. The contract also necessitated the automation, testing and commissioning of all process plant to Northern Ireland Water's telemetry system.

The scale of the project has tested the team, and called upon the far-reaching in-house capabilities of Murphy, from engineering and design to plant. However, the completion of all maintenance work on time and on budget proved that the Water team was up to the challenge.



Inlet screw pump ready for factory refurbishment in Belgium



Installation of return activated sludge pump



Mobile crane setup at Belfast prior to pump removal



Positioning of primary efficient screw pump

NATURAL RESOURCES

Delivering excellence in a diverse energy sector

Our Natural Resources team provides onshore and offshore oil, gas and energy infrastructure services throughout the UK and internationally. With our direct delivery model setting us apart from our competitors, we offer a wide range of specialist services including engineering, procurement, fabrication, construction, maintenance and decommissioning.

2018 was a volatile year for the wider sector. Oil prices remained the key driver for investment activity, and despite more positive signs in 2018, the year-end price was disappointing. However, we have seen a high degree of activity in the midstream market together with a steady investment in alternative energy, storage, midsize waste to energy plants, and modifications and diversions of existing assets. De-carbonisation remains a longer term investment in support of the Climate Change Act of 2008 and the commitment of the UK to reduce carbon emissions by 80% by 2050. As the sector embraces the de-carbonisation and decentralisation of main energy assets, this will lead to cleaner, more localised and independent energy opportunities in both the regulated and non-regulated markets.

We remain well placed to respond to these challenges – and our goal for 2018 was to continue to demonstrate how and why we're an innovative, adaptable delivery partner. We were keen to focus on our engineering-led approach, which is supported by Murphy Applied Engineering (MAE) and their ability to design unique solutions to project challenges.

More specifically, we were eager to promote early contractor involvement and the use of new and innovative technology, to position ourselves as a pioneer. With our sector becoming more competitive, our ability to challenge the status quo will be fundamental to future success.





Tunnel Boring Machine Elizabeth

Natural Resources highlights

- Completed the £10m Erskine Bridge project for SGN, constructing a 1.3km pipeline crossing under the River Clyde
- Secured and progressed the Harefield to Southall project for Cadent and the Churchover to Wormington project for National Grid – both facilitating the development of HS2
- Complex Bacton Gas Terminal project delivered for National Grid, including MAE-supported innovations such as 3D modelling and digital data-books
- Achieved sector growth with key clients despite a challenging year for the wider sector



Pipe strings in construction

Cementing our relationship with key clients

A number of projects were progressed or completed in 2018, all helping to develop our relationships with key clients.

We were contracted by Cadent to construct two high pressure gas pipelines between Harefield and Southall in West London. These pipelines are part of the early enabling works to facilitate the construction of HS2.

This particular project was engineered by MAE, including the design of two shafts connected by a 300m long, 1.8m diameter tunnel. Tunnel Boring Machine (TBM) Elizabeth was launched in September 2018 and made construction news headlines, with work set to complete in October 2019. It's a great example of how MAE is helping to give us a competitive advantage.

Elsewhere, National Grid contracted us for a similar pipeline diversion project, this time between Churchover and Wormington. Once again, our work has been pivotal in ensuring the progress of HS2.

MAE helped us to design a solution, opting for a similar 'open-cut' method to constructing the shafts. On this particular project, traffic management was also a challenge as site access was only possible through a narrow, single-track road. Furthermore, one section of our diversion had to accommodate a deep excavation – once again showcasing our expertise.

The £10m Erskine Bridge contract award, near Glasgow, was another highlight of the year. This gas pipeline project was awarded by Scottish Gas Networks (SGN).

The Glasgow Circular 450mm gas pipeline uses the Erskine Bridge structure at Old Kilpatrick to cross the River Clyde. The challenge for the project was to engineer and construct an alternate 1.3km pipeline crossing under the River Clyde so that the bridge pipeline could be decommissioned.

Winning the contract represented a huge coup for the operations team and MAE, who came up with a variety of innovative solutions to what is a very complex project. We have used trenchless installation, Horizontal Directional Drilling (HDD) and micro tunnelling to overcome a number of challenges – that comprised everything from the close proximity of local properties and amenities to the abrasiveness of the river bed. Plaudits not only go to our engineering ingenuity and in-house expertise but our ability to liaise well with the local community.

We also completed a wide range of work at the Bacton Gas Terminal for National Grid. This project began with a number of asset integrity surveys, and subsequently the replacement of a number of large bore valves. MAE and other experts throughout the business were vital to making a success of the project.

Overall, we turned the challenges of 2018 into opportunities and have entered 2019 with real momentum.



HDD pipe installation, Erskine Bridge

Bacton Gas project for National Grid

Murphy continued to deliver the Bacton project in 2018 through our Asset Health framework with National Grid.

The Bacton Gas complex on the North Norfolk coast comprises six gas terminals within four sites. It provides around a third of the UK's gas energy needs.

Our project featured 13 different schemes of work that began with surveys and led to the replacement of large bore valves. The majority of these valves were buried between three and six metres deep within this hugely complex site. Given the huge energy output of this terminal, the project demanded excellent planning and operational innovation working in conjunction with the National Grid Terminal Operations Team at this Control of Major Accident Hazards (COMAH) site.

“ **Excellent collaborative working between the Asset Owner and Main Works Contractor has helped to ensure that the gas continues to flow, whilst ensuring the safe future operation of the site.** ”

Stacey Ledgerwood
Murphy Project Manager

MAE introduced 3D modelling and digital scanning into the survey phase. This not only helped us to overcome the issue of congestion, but allowed us to virtually represent to our client how our temporary work and infrastructure would be conducted. This offered assurance to the client, but also showcased how forward-thinking we are as a business. Our subsequent use of excavation supports, crane pads, open battered excavations, instrumentation, cabling supports, and various other techniques allowed us to complete the valve replacements within defined outages and with no disruption to the site.

This project proved two key things about Murphy. Firstly, this was 'One Murphy' in action, as our designers, engineers and various experts came together to deliver a seamless, self-delivered solution. Secondly, this project illustrated how effective we are when engaged at an early stage of a project.



Aerial view of Bacton Terminal



48" prefabricated spool installation

CONSTRUCTION & PROPERTY

Creating places to live, learn and work

The Construction & Property team delivers new-build residential developments, complex conversions and joint venture projects and refurbishments. We work collaboratively with private developers, investors, landlords, local authorities and residential providers to deliver end-to-end services using our unique 'One Murphy' approach.

In 2018, our goals varied from securing new contracts and positions on frameworks to recruiting new staff. This was all to keep pace with our ambitious growth plans, to promote our capabilities to the market, and to establish our ability to operate in a digital landscape.

2018 was also a big year for completions, with challenging and significant projects like the Institute of Physics and Dalston Lane Terrace reaching a successful conclusion to the delight of our clients.

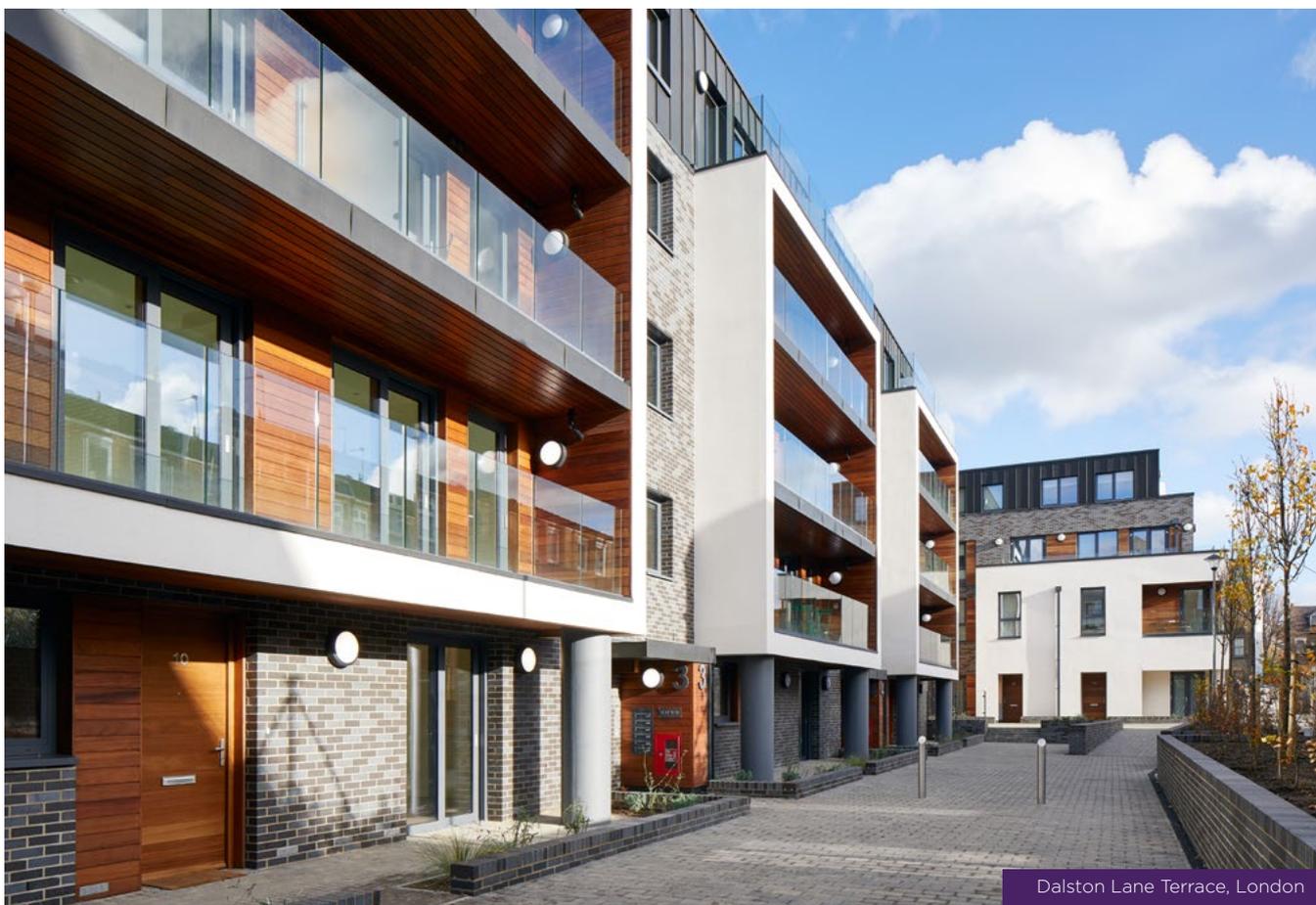
Laying the foundations for long-term revenue

In 2018, we were delighted to secure places on two separate frameworks – one for Catalyst Housing and one for Be First, Barking and Dagenham's pioneering regeneration company. On the Be First framework, we secured first place, which immediately led to us being awarded the contract for a conversion and new-build project at the Sacred Heart Convent in Dagenham, East London. Both frameworks last for four years, so along with our position on the DPP3 Homes England Framework, this has put us in a fantastic position for future growth.

We enjoyed significant contract wins on a nine-storey residential new-build block in Camden, London, for British Land, as well as the Greenwich South Street Project for Folgate Estates. We also signed up to work on the new plant depot for Murphy in Hemel Hempstead and to deliver the first volumetric homes for Legal & General Modular Homes at their Crowthorne site near Reading.

2018 saw the beginning of a significant project in Gardiner Place, Henley-on-Thames, for Catalyst Capital. The new-build project, consisting of 14 high-spec apartments above ten retail units, is in the heart of the historic town and will utilise all of our skills and capabilities. The initial archaeological dig has already been completed to allow our substructure works to commence. Several artefacts of interest were unearthed and will be displayed in the town.





Dalston Lane Terrace, London

Construction & Property highlights

- Secured positions on two frameworks – Catalyst Housing and Be First
- Major contract wins awarded at St Anne’s Church in Camden for British Land and the Greenwich South Street Project for Folgate Estates
- Began the new-build project for Catalyst Capital at Gardiner Place, Henley-on-Thames
- Completed headline-grabbing Institute of Physics’ head office and Dalston Lane projects
- The complex project at King’s Cross Bridge progressed
- Two new ideas developed through Murphy’s Innovation Portal which are innovation stations and a exo-skeleton suit
- Silver secured at the Considerate Constructors Schemes Awards for our Paul Street project



King’s Cross Bridge, London

Progress made in every part of the business

The Institute of Physics' head office and Dalston Lane Terrace projects were successfully completed on time and on budget. The eco-friendly and highly innovative Institute of Physics building has already made headlines, while the Dalston Lane Terrace development, made up of 44 residential units and ten retail units, has been a great addition to the local community.

Significant progress was also made at King's Cross Bridge for UK Real Estate Ltd. At King's Cross Bridge, we successfully completed the demolition of the existing buildings and the construction of the new structural frame. The project is highly challenging - a great example being that the tower crane we've mounted is on a temporary structure located directly above the Metropolitan Line on the London Underground. The fact the trains operated an uninterrupted service is testament to the skills of the project team.

2018 has also been a year of innovation. We had two ideas presented at the Murphy Engineering Tomorrow Forum (ETF), which went through the MurphyInnovation Portal. The first was for an innovation station, which aims to provide a necessary tool on site for staff to submit ideas associated with innovation. The second was an exo-skeleton suit for assisting manual handling operations, which is already being applauded and trialled across the business.

Furthermore, we became the first department in Murphy to use the cloud-based construction project management software Aconex. We've already seen the benefit of this highly efficient system as it has brought all teams together in one Common Data Environment - and we'll be utilising even more features in 2019.

Finally, all of our hard work was recognised at the Considerate Constructors Scheme Awards, where we won silver for Paul Street. This was a fantastic reward for the team who delivered this project.



Gardiner Place, Henley-on-Thames

Institute of Physics, London

The construction of the Institute of Physics' new headquarters in London was completed in 2018, and is one of our most headline-grabbing projects to date.

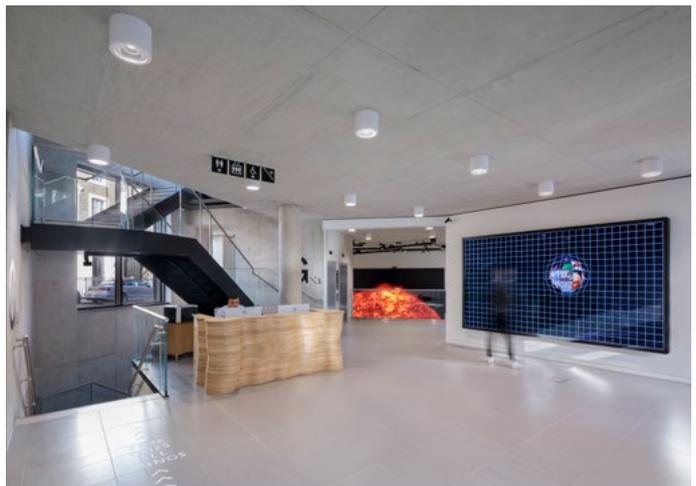
It was a hugely challenging project. Located in the Keystone Crescent conservation area, the original façade had to be retained during demolition and the basement level had to be lowered significantly, with extensive underpinning being undertaken. Meanwhile, historic adjacent properties had to be carefully supported and monitored throughout. The fact the entire project has been completed safely, on time, on budget and to the delight of our client, speaks volumes about the skill and care of the team who undertook this project.

“**Murphy installed a GeoKoax Ground Source Heat Pump system, the 1st installation of this system in the UK. The system was a programme-saving solution and saw a significant reduction in waste being removed from site.**”

Paul Hart
Murphy Contracts Manager

A great number of innovations were implemented on this project to ensure this important building makes its mark both visually and environmentally:

- The geoKOAX geothermal pile system was installed for the first time in the UK; ground source heat pumps and photovoltaic panels were utilised to heat and cool the building in the most energy-efficient manner
- Light-based Wifi (Li-Fi) light fixtures were installed, which connect to the internet and are the first demonstrators of their kind in the UK
- Green and blue roofs were installed that encourage biodiversity, store storm water and regulate drainage
- Inventive design features were implemented including a huge glazed atrium to provide natural daylight to every floor and to collect all used warm air before being expelled from the building via the heat recovery system
- The project was rated BREEAM Excellent for its many innovative sustainability features



MURPHY PLANT

The foundation of 'One Murphy'

Murphy Plant manages and maintains more than £100m worth of plant, transport and specialist equipment for Murphy to help deliver world-class infrastructure to our clients.

For 2018, the goal for Murphy Plant was to continue to increase the company's use of our equipment. We had driven core fleet utilisation in previous years, but we were determined to step up our efforts through smart investment in the right equipment, better geographical fleet management and retrospective swap-out of rehired equipment.

We also wanted to improve awareness of our growing plant capability and to work more collaboratively with the rest of the business. By doing so, we could not only reduce rehire spend levels but also provide better value to our clients through the tendering processes. After all, our capability is the foundation of the 'One Murphy' approach.

Throughout the year, we also sought to maintain our excellent safety record and to increase our support network concerning mental health issues.

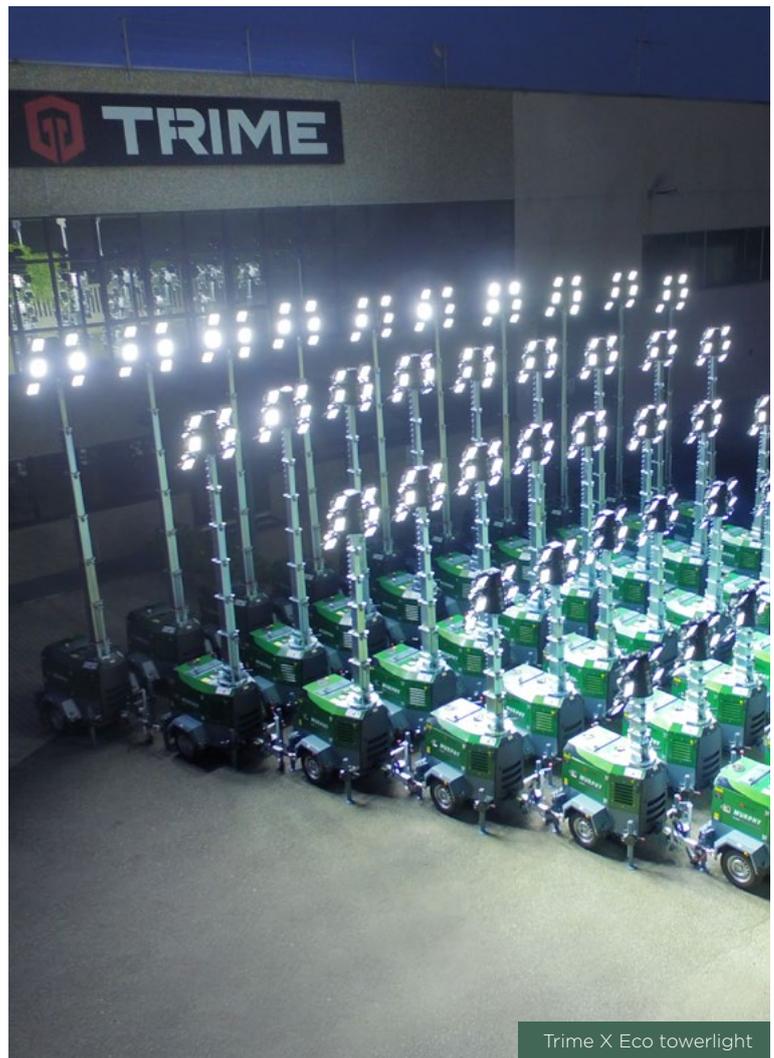




Hybrid Fuso 7.5t trucks

Plant highlights

- Syrnix hire management platform further developed to improve the hiring process
- Variety of innovative plant and equipment introduced on key projects, including the 'T-Vac' vacuum excavator, the Klemm KR709-3 rig and a fleet of the new Leica DD SMART utility locators
- Air Shovels introduced to Murphy, reducing service strikes by 30%
- Supported Ground Engineering integration in Hemel Hempstead
- Developed and boosted our plant base in Ollerton in order to become a market leader
- Adopted a range of environmentally-friendly green equipment that reduce CO₂ emissions and fuel use



Trime X Eco towerlight

Investing in innovative plant

We were delighted to further develop Syrinx in 2018 – our innovative hire management platform. It has played a key role in making our hiring processes more efficient, and therefore more collaborative. It is intuitive and customisable too, so we're making it fit the needs of the business perfectly. Murphy Plant is pushing the developers' point of rental into new system functionalities, providing industry-first technologies. Through Syrinx, the availability of all our plant and equipment is completely transparent in real time, which is maximising utilisation.

We also invested heavily in our fleet, which helped to significantly reduce the age of our assets and indeed the core utilisation. More specifically, we also saw many key Murphy projects benefitting from new and innovative equipment we had invested in.

The 'T-Vac' vacuum excavator was vital in helping to excavate congested underground sites in Central London, for example the ongoing Crossrail project. Elsewhere, our innovative Air Shovels helped to detect hard-to-find tree roots during water pipe repair work in North London for Thames Water.

We also worked closely with Murphy Ground Engineering to utilise new rigs like the Klemm KR709-3 on the Iver Station project – a London Overground scheme, again in conjunction with Crossrail. Furthermore, we played a vital role in the UK's biggest road construction project – the A14 Cambridge to Huntingdon upgrade. Murphy was contracted to demobilise existing utilities along the route and install new cable, and our Leica DD SMART utility locators were critical in identifying assets faster and more accurately than ever before.

Finally, we were pleased to support Murphy Ground Engineering's integration into our base in Hemel Hempstead, and to improve our hub in Ollerton through strategic investments.



Air Shovels – Thames Water

Murphy is maintaining and repairing water pipes in North London for Thames Water, as part of an ongoing joint venture with Morrison Utility Services.

A key part of this project involves excavation work in footways and carriageways. On average, we are carrying out 750 a week – and by introducing Air Shovels we have vastly improved our performance.

Air Shovels are used to locate tree roots without damaging them or any surrounding utilities. The Air Shovel also locates gaps in root systems, to ensure those areas are suitably piled.

Since introducing them, service strikes have reduced by 30%, productivity has increased, and client feedback has been unanimously positive. It's an excellent example of Murphy Plant making investments in the right equipment.



GROUND ENGINEERING

Building from the ground up

Murphy's Ground Engineering business provides a range of piling and geotechnical services throughout the UK and Ireland. Our capability portfolio is expanding as our resource base develops to support a variety of industry sectors and major projects.

In 2018, we focused on investing in and developing our 'One Murphy' self-delivery capability and our drive for continuous improvement and operational excellence.

This meant targeted investment in people, systems, processes and resources – and strengthening internal relationships with other Murphy teams. Furthermore, we were intent on expanding our services and markets through piling rig acquisition and client development – all while continuing to grow our operating regions.





Three continuous flight auger piling rigs - Saville Court, Windsor

Ground Engineering highlights

- New UK hub for Ground Engineering and Murphy Plant established in Hemel Hempstead
- Completed challenging George Street project, worth £2.4m
- £1m Ringaskiddy Port project completed
- Other major project completed including the On Network Stations Improvement Programme at Iver Station for TfL and Oweninny Wind Farm for Roadbridge
- Continued major investment in new rigs, remote diagnostics and a computer monitoring system of rotary pile construction, which is a first in the UK
- Apprenticeship scheme established with local college to engage with the local community and bring talent into the industry



Secant shaft to 32m possible with new rig capabilities and computer monitoring

Strengthening every part of the business

2018 was a success for many different reasons. We fully established our UK hub in Hemel Hempstead, supported by our satellite base at the Ollerton Murphy Plant depot. These sites maintain a close link with our long-established base in Ireland, and give us a better platform for growth.

There were also further rig and plant acquisitions that helped to improve our self-delivery capabilities. Relationships with our core sector and service teams have developed too, harnessing the power of our 'One Murphy' approach.

Meanwhile, our client base has expanded. Several multi-million pound/euro projects were undertaken in 2018, helping to deliver our budget as well as prestige for the wider business. This success continues with further significant opportunities in 2019, which will showcase our capacity to deliver large-scale, technically challenging geotechnical projects. Our proposals and involvement in these projects has helped deliver an optimised and cost-efficient solution for our clients. We continue to strongly advocate early engagement, utilising the breadth of experience and support we can provide.

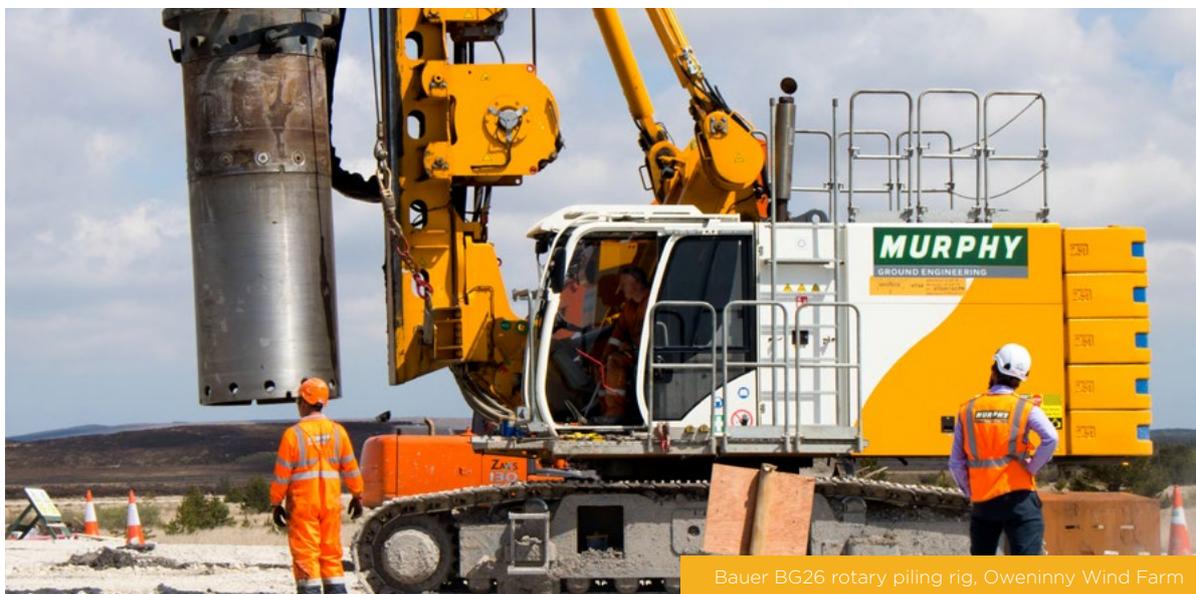
Standout contracts included the On Network Stations Improvement Programme at Iver Station for Transport for London (TfL), the first for our restricted access Klemm 709 3G rig; the George Street project for Tide Construction, utilising our large rotary and CFA piling rigs; and the Ringaskiddy Port contract for BAM, which required the rock

drilling capability of our large Bauer rotary rigs. These projects, as well as many others, were great examples of how our industry-leading machinery has helped us to win and execute major contracts.

Elsewhere, we've seen innovation break through barriers across every aspect of our business. We have implemented remote diagnostics across the rig fleet for our maintenance regime and a computer monitoring system of pile construction for our rotary rigs to complement our existing CFA pile construction monitoring. We've also developed our marine piling activities and experience with specialist partners, and overseen the development of soil nailing and Horizontal Directional Drilling (HDD) capability to get us ready for project delivery in 2019 and beyond.

Furthermore, we have improved our safety and SHESQ statistics across the year and have two NEBOSH-qualified project managers to support our SHESQ function. We've also started working with a local college to hire apprentices, with the project management and design management teams already taking advantage of the pioneering scheme.

Our link with the significant functional support within Murphy provides a strong platform of expertise and includes access to more than 400 engineers through Murphy Applied Engineering (MAE).



Bauer BG26 rotary piling rig, Oweninny Wind Farm

George Street, Croydon Project

The project at George Street, Croydon for Tide Construction was distinctly challenging for many reasons. It involved the construction of a secant piled wall and bearing pile solution.

Initially, we value engineered the pile design to minimise pile lengths and diameters, reducing both cost and time. This was supported with a considered pile testing regime. The programme was then carefully sequenced with all other activities ensuring the site ran efficiently.

The success of this £2.4m project being delivered on time and on budget relied on superb teamwork and ingenuity. Concrete was, for example, delivered to the concrete pump and agitators by a boom concrete pump on College Road. Then, to exit the site smoothly and ensure the client could take advantage of bulk excavation programme savings from piling, we designed and implemented contract lifts. They removed our rigs from the basement area efficiently and avoided the need for access ramps.

Challenging piling at Ringaskiddy Port, Ireland for BAM

The £1m project to install 116 bored piles for Port of Cork's new terminal at Ringaskiddy was a big test for the team.

Working in such close proximity to the sea meant there was an added dimension to manage, and a range of additional risks to consider and negate. We completed the project with no incidents, which is credit to the forward planning and diligence of the team. Meanwhile, the port itself operated at full capacity while the project took place, which exemplifies how well we managed relationships with our client, the local village and other stakeholders.

The timely completion of this ecologically and logistically complex project to the full satisfaction of the client was a great achievement for MGE.



Rotary and continuous flight auger rig - George Street, Croydon



Piling rigs at George St, Croydon waiting to be lifted out of excavation



Bauer BG30 rotary rig, the most powerful rigs on the MGE fleet for hard rock drilling



Bauer BG30 rotary rig at Ringaskiddy Port Project, Ireland

URBAN INFRASTRUCTURE

Bringing 'One Murphy' to the capital

Murphy has been building, maintaining and improving the nation's highways and streetscapes since the 1950s. With a reputation for tackling challenging high-profile projects, we have enhanced some of the country's most famous locations.

Last year saw the inception of the Urban Infrastructure team, which brought together our capabilities in highways and streetworks. With considerable experience and knowledge in both areas, it was necessary to harness our 'One Murphy' approach and deliver our services as a united front.

The team is committed to strengthening existing relationships and look forward to establishing new connections.





Elephant Park, London

Urban Infrastructure highlights

- Urban Infrastructure offering introduced to incorporate broader 'One Murphy' approach
- Commencement of £2.5m Tottenham Court Road project for Laing O'Rourke and Crossrail
- Subsequent projects awarded for Crossrail at Liverpool Street and Moorgate stations
- Section 278 work completed in Wood Dene, Peckham and awarded in Old Vinyl Yard, Hayes
- Continuation of high-profile Elephant Park project with specific focus on all external landscaping and S278 works associated with phase two of the development
- Lyndhurst Gardens basement excavation and substructure works project completed in conjunction with Murphy Ground Engineering (MGE)



Elephant Park, London

Regenerating London's most iconic public spaces

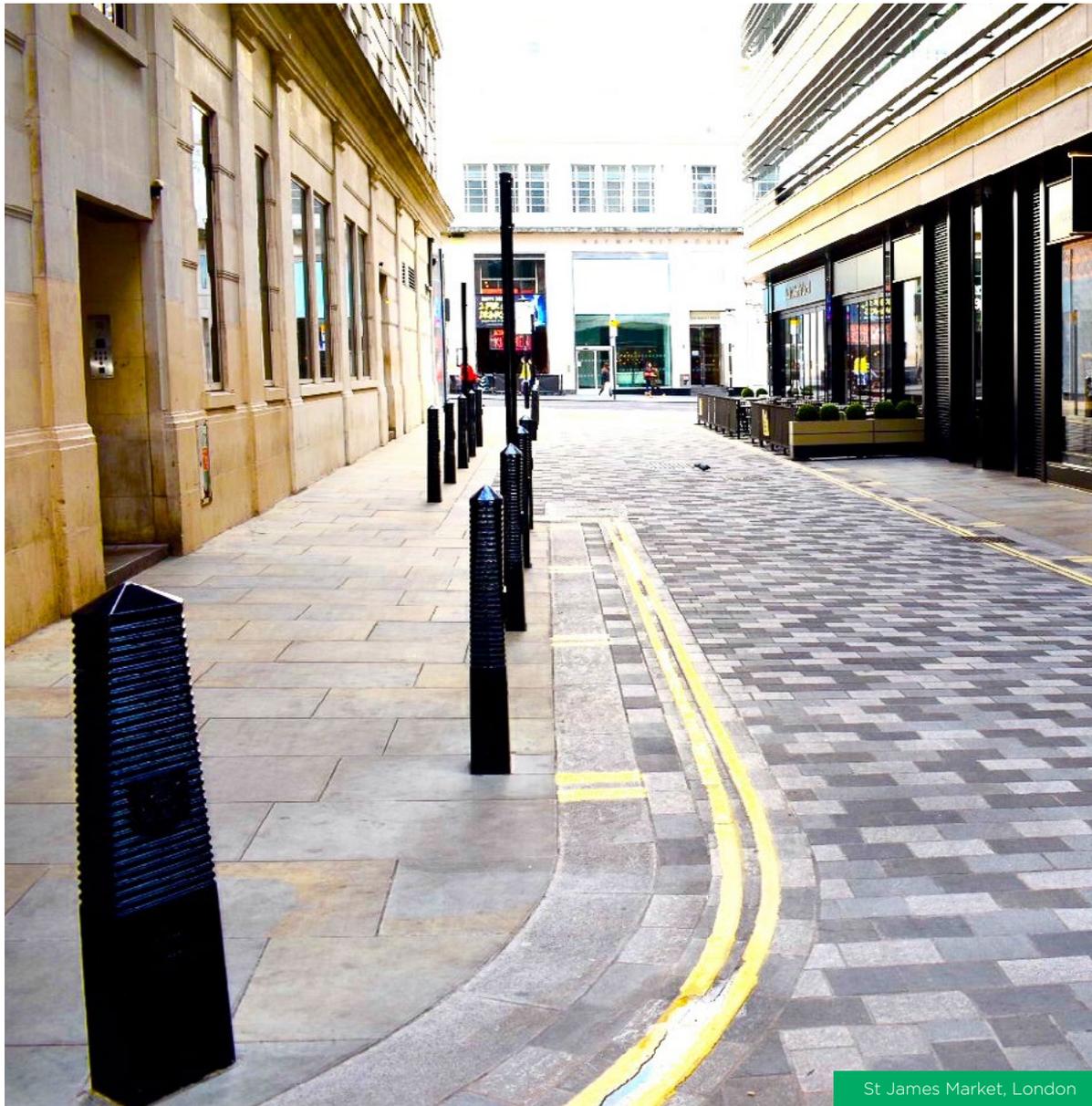
The renewed focus on our 'One Murphy' approach bore positive results in 2018.

A great example was our project in Lyndhurst Gardens. We carried out basement and reinforced concrete substructure work, which followed piling carried out by the MGE team. Projects like this are a win-win; clients get the ease and efficiency of one supplier for multiple services, and Murphy's self-delivery reputation grows.

Similarly, following our successful completion of drainage and urban infrastructure work for Crossrail at Tottenham Court Road station, we commenced multi-service contracts at Liverpool Street and Moorgate stations involving drainage, utility installations and highway modification works. Our works at Liverpool Street and Finsbury Circus are ongoing as our team continue to support the ambitious Crossrail plans.

Throughout 2018, work at Elephant Park continued to shape vital public spaces in the rapid regeneration of Elephant & Castle in London. Traffic-free areas, communal open spaces and a new high street are vastly improving liveability in this densely populated location.

Topping off a hugely successful year for the team was the award of Section 278 at Old Vinyl Yard in Hayes. The S278 contract includes highway modification works associated with new developments.



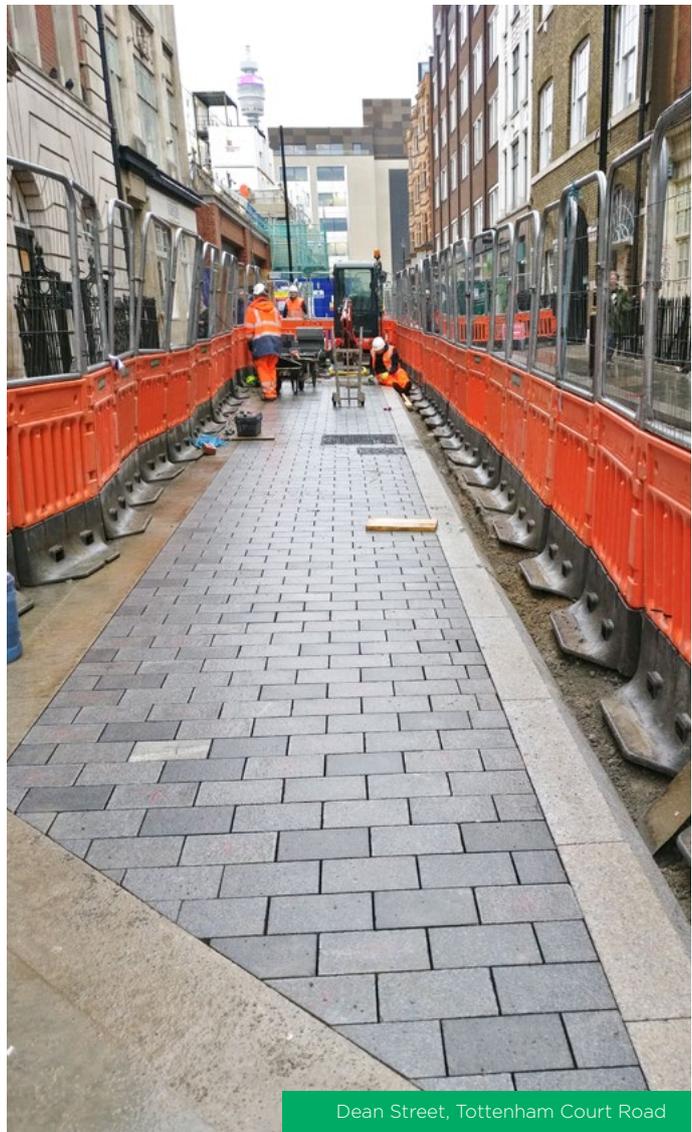
St James Market, London

Crossrail project

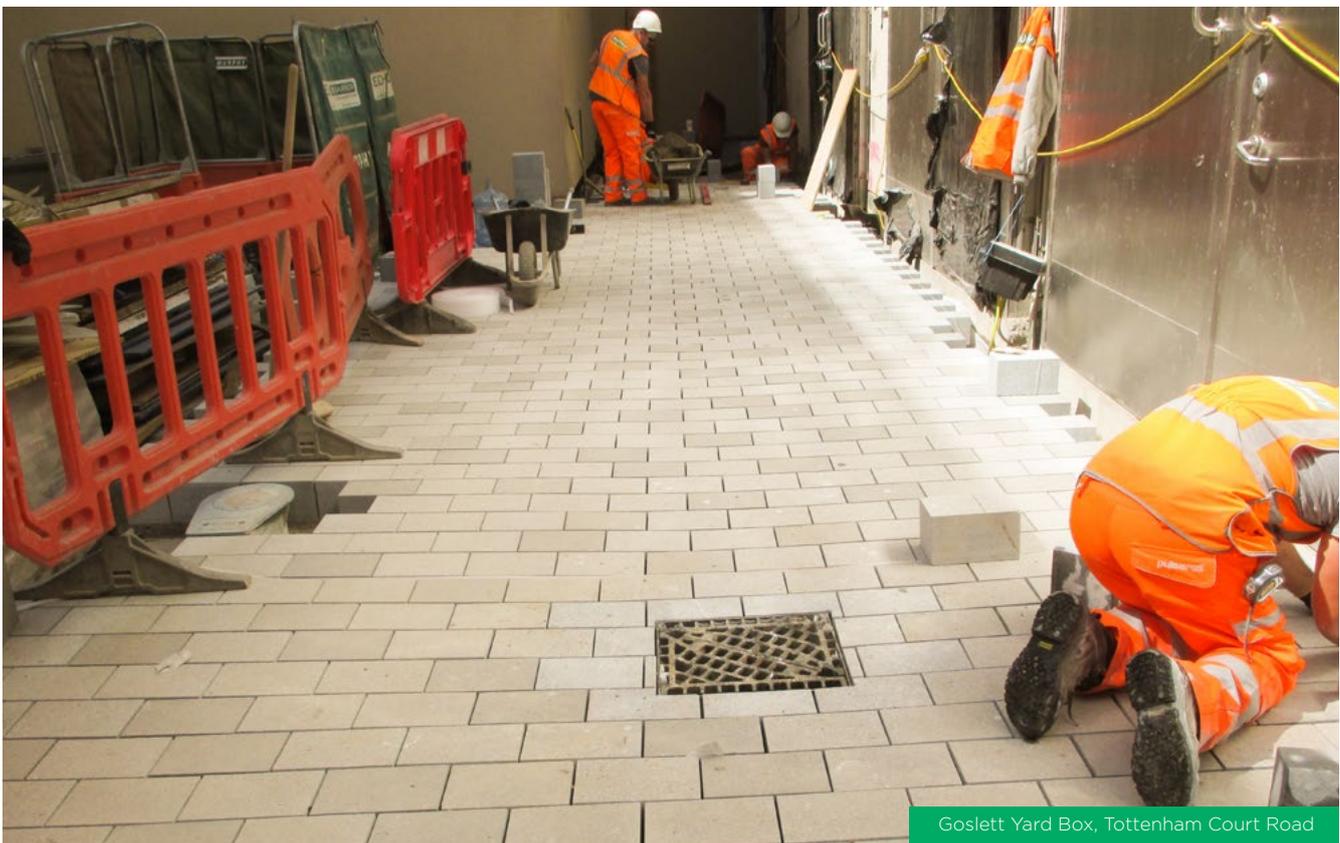
The £2.5m Urban Infrastructure project for Crossrail and Laing O'Rourke involved the enhancement of Tottenham Court Road station and the improvement of various adjacent streets in Soho, London.

The range of work carried out was vast, and included kerbing and paving, drainage, carriageway and footway reconstruction, security, traffic management, street furniture installation and much more.

This extremely densely populated area presented a number of logistical challenges but the biggest was to avoid overt disruption to pedestrians, vehicles and nearby businesses. Due to the strength of our delivery on Tottenham Court Road, Murphy was also awarded other Crossrail projects, which is testament to how well the challenges were managed.



Dean Street, Tottenham Court Road



Goslett Yard Box, Tottenham Court Road

UTILITY CONNECTIONS

Establishing new networks

Murphy Utility Connections provides an all-in-one installation service for gas, water, electricity and telecommunication networks. Catering for residential and commercial developers in the UK and Ireland, we work on projects of every shape and size.

In 2017, we were delighted to have been granted gas and electricity distribution licences by the regulator Ofgem to create our own independent gas and electricity transportation business, allowing us to own and operate energy networks across the UK. In line with our strategic growth plan, in 2018 we focused on expanding our operational activities into the South East and South West, securing 6,530 gas and 4,348 electric connections nationally.

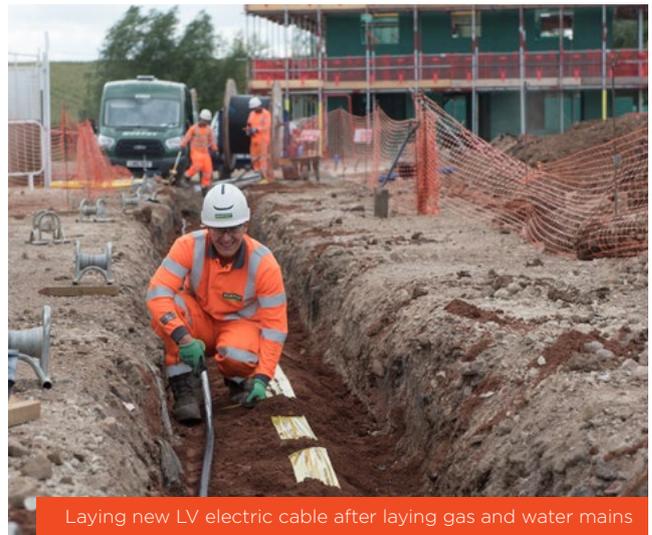




Preparing water pipe to be loaded into a pipe-trailer

Utility Connections highlights

- Crab Hill development for St. Modwen extended – worth £4.8m in total
- 1,100 plot residential project secured in Llanwern, South Wales, for Redrow Homes
- Multiple, multi-million pound contracts secured and progressed for CALA Homes and Barratt Homes
- Exhibited at the HBF Utilities Conference at the WD Stadium in Wigan
- Highly commended at the National Housebuilding Federation Awards for ‘Service Provider of the Year’



Laying new LV electric cable after laying gas and water mains



Team receiving instructions from Senior Site Manager

New contracts

In early 2018, we secured a £2.1m contract to deliver a gas and electricity network for a 1,100 plot housing development at Llanwern, South Wales. The build programme, with developer Redrow Homes, is expected to last five to seven years, commencing in March 2019.

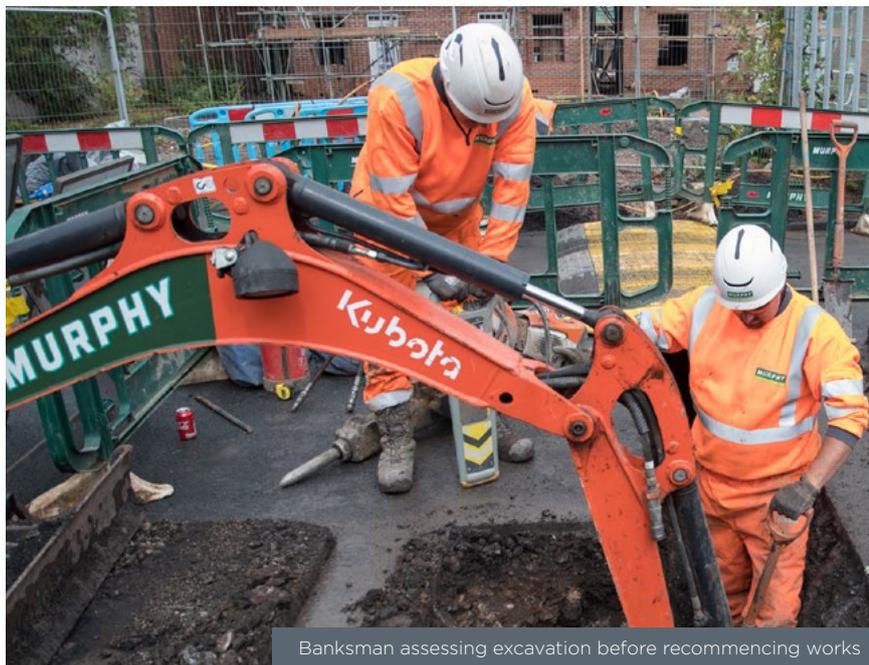
Utilising our 'One Murphy' approach, in conjunction with our Construction & Property team, we were successfully awarded a project known as Nora 4 by Lovell - a contract worth approximately £500,000. We are delivering gas, electricity and water networks to this pioneering project that comprises 100 modular residential dwellings. We have worked closely with the developer and the manufacturer Legal and General Modular Homes to design and deliver non-standard utility installations that complement the unique challenges of delivering modular-type construction.

Another noteworthy contract included multi-utility installations at 482 residential plots for Barratt Homes in Cannock, Staffordshire, at a value of £1.7m.

2018 also saw the successful construction and commissioning of 3,600m of 180mm gas and water mains to supply a newly constructed industrial park in Coalville, Leicester, for our key client Winvic.

Strategically, this year was all about reinforcing our unique vision: 'passionate about direct'. Essentially, this reflects our ability to install multiple gas, water and electric connections in a single visit with one team.

This approach was perfectly illustrated when we exhibited and presented at the HBF Utilities Conference at the WD Stadium in Wigan in September. Furthermore, our unique approach saw us earn a commendation at the National Housebuilding Federation Awards, for Service Provider of the Year. This recognition clearly illustrates that our multi-utility and multi-service approach is pioneering, and making a mark in the industry.



Banksman assessing excavation before recommencing works

Crab Hill project for St. Modwen

We were delighted to be awarded the first phase of utility connections for the vast residential and commercial development at Crab Hill, Oxfordshire.

Our client St. Modwen, impressed with our delivery and capability, awarded Murphy with phase two of the development, which will see multi-utility connections installed for 1,500 residential plots and six commercial buildings of varying size. The detailed works include connecting into an existing primary substation and the construction of a further seven substations. The project is expected to extend over the next ten years, in a region that is renowned for new housing developments.

The value of the project is currently £4.8m but this could rise as our partnership grows. It's a reflection of the growing reputation of the Utility Connections business, and the perfect illustration of our ability to deliver an all-in-one utility solution.



PIPELINE TESTING SERVICES

Putting our expertise to the test

Pipeline Testing Services (PTS) is a specialist Murphy business based in Leeds. It conducts a wide variety of pipeline pre-commissioning, commissioning and integrity management services. These services include flushing and cleaning, pressure testing, desiccant drying, leak detection, flange management and remedial works.

In 2018, our primary goal was to increase our presence across various sectors by improving our technical capabilities. As ever, this aim also tied into the role we play in the 'One Murphy' approach within the wider business.

More specifically, this meant working to pre-qualify and build relationships with more clients, and building our network within the internal Murphy client base.

New projects; new techniques

We were delighted to be part of the Erskine Bridge Pipeline Project which began in 2018, awarded by SGN, worth a total of £9m to the business. With Horizontal Directional Drilling (HDD) employed extensively on this project, all of our pre-testing expertise has come to the fore.

Elsewhere, we successfully won a contract for Barhale on the Elan Valley Aqueduct, as part of the Birmingham Resilience Project.

We worked closely with Murphy Ground Engineering to test 27km of pipeline on this 100 year old aqueduct.

We also secured and delivered two in-line inspection contracts for Greenenergy; supported Laing O'Rourke by solving a leaking pipeline in Draycot, Derby; and provided hydrostatic testing of rail tanker loading terminal pipework for Air BP. Throughout the year, there has been abundant proof that our client base and our industry reputation is growing all the time.

It has also been a year of innovation for PTS. For example, on the Stublach Gas Project for Storengy, we used an entirely unique foam pig-mounted caliper measurement tool. Moreover, in 2018 we implemented new digital testing equipment on our very first project, a SIRGE pipeline for px group.

However, we've ensured our internal systems and processes have kept pace with the evolution of the rest of the business. We've upgraded our new test units to incorporate bespoke report formats and remote access; we've implemented Microsoft Power BI on all major projects; and we've also moved our entire business to Microsoft Sharepoint to work more smartly and efficiently.



Erskine Bridge Pipeline Replacement for SGN

The £9m Erskine Bridge Project for SGN has been a significant coup for Murphy, and the PTS business has already played a key role in its successful progression.

The project replaces the existing pipeline at Erskine Bridge, near Glasgow, which crosses the River Clyde. It's a technically challenging project that has, among other techniques, necessitated the use of HDD.

The project is already notable, but is already notable for a major milestone: the impressive tunnel boring machine (TBM) required for the 300 metre long, 1.8-metre diameter tunnel.

Pipeline Testing Services highlights

- Won and completed the testing of a number of sections on the historic Elan Valley Aqueduct Birmingham Resilience Project for Barhale
- Ongoing support on the Erskine Bridge Project for SGN
- Significant contracts completed for Laing O'Rourke, Greenenergy and Air BP
- Innovative processes introduced on Storengy and px projects



PTS drying spread mobilised on Mashco works



PTS filling pumps being mobilised for GTTW project in Northern Ireland



Certified test ends being prepared in PTS yard

SPECIALIST WELDING SERVICES

Major innovation and supporting contract wins

Specialist Welding Services (SWS) provides support to the energy sector in the UK, Ireland and Canada. Our specialisms include welding, fabrication and piping solutions that incorporate welding engineering, material engineering, inspection, non-destructive testing (NDT) and technical authority consultancy.

In 2018, we continued to innovate and build on the excellent reputation we have already established in our sector. Our fabrication site in Leeds gave us exactly the right platform to do that – with 1,800sqm of welding space, huge lifting capacity, and our own painting facility and pressure testing business next door. All in all, this has allowed us to provide a turnkey solution for our clients.

We extended our capabilities further in 2018 with some key innovations to our services. Laser spool scanning was introduced, which has facilitated more precise measurement for every spool. Additionally, we've invested in new welding technologies and semi-automated processes to improve production and quality.

These improvements helped to secure a number of high-profile contract wins throughout the year.

Contracts secured with National Grid, Cadent and more

We were awarded a contract for a major project by Cadent. Our scope of works involved 'above ground installations' (AGIs) and a pressure reduction station across four Cadent sites – with Cadent investing more than £10m in the rebuilds. This work will help to ensure these sites are fit for purpose for years to come. Meanwhile, we secured a similar AGI contract for National Grid worth £13m. This design and build project will improve National Grid transmission sites near Exeter, Kings Lynn, Cambridge, and Bishop Auckland. Once again, our in-house facility in Leeds will play a vital role.

We also helped to win a particularly complex pipeline replacement contract near Glasgow for SGN, worth £9m. The challenging Erskine Bridge project, requiring trenchless installation, Horizontal Directional Drilling (HDD), micro-tunnelling and all the expertise of our in-house engineering team, perfectly illustrates the advantage of our 'One Murphy' approach.

Elsewhere, we also secured lucrative oil and gas contracts in Bacton and with Storenergy, both of which helped to make 2018 a year of growth and opportunity for SWS.



Large diameter pipe cutting

Harefield HS2 Cadent Project showcases Murphy innovation

In 2018, we began working with Cadent on the Harefield to Southall pipeline diversion project. We are diverting two major high pressure gas pipelines to facilitate the construction of the new High Speed 2 (HS2) railway. This project has utilised our semi-automatic welding bug technology to ensure efficiency and quality is maintained when welding large diameter high-grade pipe.

The project is ongoing, but is already notable for a number of milestones, including the launch of the impressive Elizabeth Tunnel Boring Machine (TBM) for the required 300-metre long, 1.8-metre diameter tunnel.

Specialist Welding Services highlights

- Awarded a £10m project by Cadent for 'above ground installations' and a pressure reduction station
- Secured another 'above ground installation' contract for National Grid worth £13m
- Awarded complex Erskine Bridge project by SGN, worth £9m
- Executed semi-automatic welding of HS2 48" pipeline diversion
- Other contracts awarded in Bacton and Storengy
- Invested in new welding equipment
- Invested in laser spool survey for fabricated pipework



Process piping



Spool dimension survey

IRELAND

Becoming the go-to contractor in Ireland

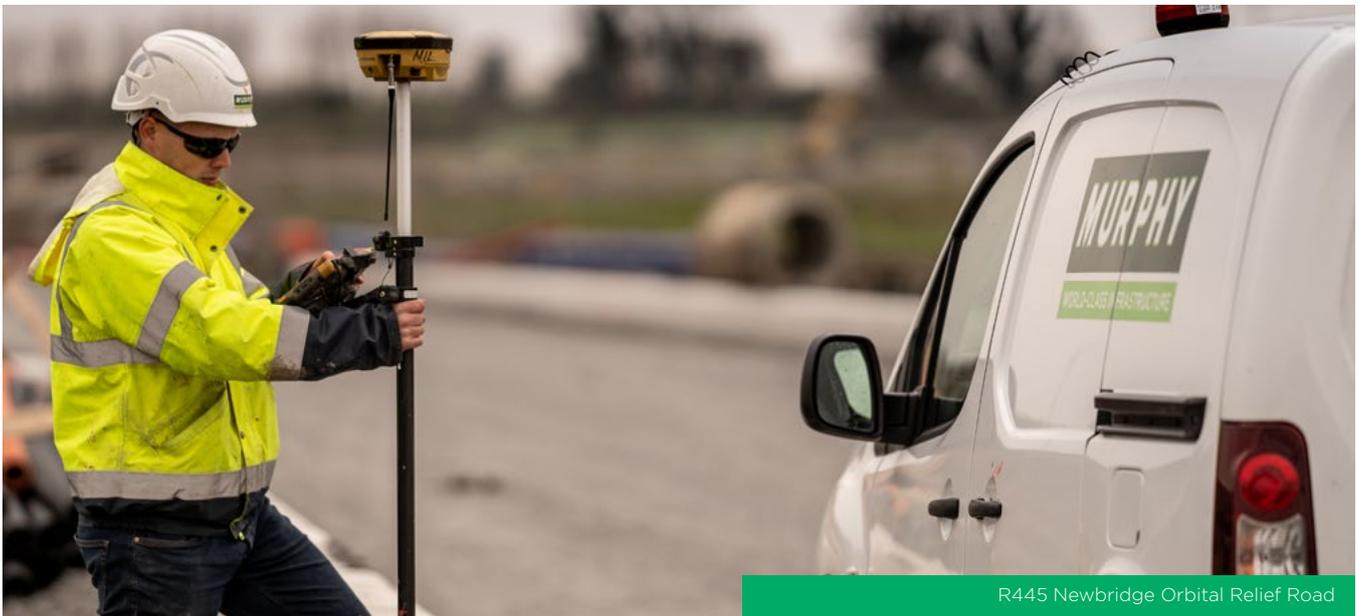
Murphy International Limited (MIL) operates our business in Ireland, offering a full range of services including civil engineering, building, process engineering, structural steel fabrication, piling, construction, facilities maintenance, and design, build, and operate services.

For MIL, 2018 was a big year for many reasons. Most notably, we began to fully optimise our diverse range of 'One Murphy' capabilities.

We were eager to target core sector opportunities and to pursue new clients and contracts in other burgeoning sectors. Meanwhile, with our competencies consistently developing, we also aimed to target niche and specialist areas that now fell within our capability and expertise. More broadly, 2018 was about enhancing and developing the Murphy brand across Ireland.



Completion Works at Staleen Water Treatment Plant, Co.Louth, Ireland



R445 Newbridge Orbital Relief Road

MIL highlights

- Multiple water contracts won including Stillorgan Reservoir and Birr & Tullamore Water Supply Schemes (WSS) for Irish Water
- Huddersfield Energy & Recycling Facility (ERF) contract secured for Yorkshire Water
- R445 Newbridge Orbital Relief Road project secured, a significant win for our growing civils sector
- Brownfield remediation contract for Gas Networks Ireland in Limerick secured
- Long-term HP Gas Transmission System contract for GNI (UK) in Northern Ireland awarded
- Multi-million Listowel Gas, Apple Market Waterford, and Curragh Racecourse projects completed
- Murphy Ground Engineering completed a number of high profile piling projects, in the most challenging conditions and environments
- Our Structural Steel business continues to develop its capability from our Newbridge facility, delivering a growing portfolio of projects across the civil, rail, and power sectors
- Several projects officially recognised at the Civil Engineering Contractors Association Awards



MEICA installation at WTP Ireland



Road Construction works at the R445, Newbridge, Co.Kildare

A year of significant growth

With the help of our mechanical, electrical, instrumentation, control automation (MEICA) and process engineering expertise, we won significant water contracts including Stillorgan Reservoir and Birr & Tullamore WSS for Irish Water. We are also currently the preferred bidder on a number of other contracts which are likely to crystallise in 2019. We were delighted to secure the £45m Huddersfield Energy Recovery Facility (ERF) contract for Yorkshire Water, which illustrates our industry-leading position in the process engineering sector.

Elsewhere, we were successfully awarded a €12m distribution road project - R445 Orbital Relief Road - conveniently close to our headquarters in Newbridge. This is a significant contract for Gas Networks Ireland to remediate an old gasworks facility in Limerick, and will commence in early 2019. Our longstanding expertise in delivering gas infrastructure projects also led to us being awarded a five-plus-three year HP Gas Transmission System contract for GNI (UK) in Northern Ireland.

On top of an impressive number of contract wins, there were also some significant project completions. The complex Listowel Gas

Project and the award-winning Apple Market public realm contract in Waterford were both completed in 2018, winning a number of plaudits for the business. Furthermore, the Louth Water Treatment Project, valued at €19m, and the £35m Gas to the West Project in Northern Ireland, both made good progress and will be completed in 2019.

Our growth was exemplified in other ways too. In 2018, our staffing numbers reached record levels, in order to meet the growing demand for our services. We have trebled the number of apprentices across our business to 15. Significantly, it was also an award-winning year. We were recognised for excellence in three out of five award categories by the annual Civil Engineering Contractors Association Awards. Our efforts to limit the effects of Hand Arm Vibration Syndrome saw us win 'Best Health and Safety Initiative', and our Waterford City Apple Market regeneration project secured second place in the 'Best Project (€2-€5m)' category.

As we move through 2019, we do so with real momentum and a growing reputation as contractor of choice for many prestigious clients. We are well positioned to develop a number of long-term business opportunities across a diverse range of sectors throughout Ireland. We have our team and strategy in place - and invoking our strategic drivers, 'we are fit to start' and 'better engineered' to deliver dependable project management.



Listowel Gas Project for Gas Networks Ireland

Gas Networks contracted us to lay, test and commission a 41km gas pipeline from Craggs AGI near Foynes in Co. Limerick to Listowel town, Co. Kerry. The contract was executed in a joint venture with GMC Utilities Group and the value of this project is approximately €15m.

Traffic management was a key challenge throughout the project, particularly on the 38km of minor roads between Foynes and Listowel. This, and all necessary diversions, were managed successfully by our careful planning and early engagement with local authorities. More broadly, the sheer number of towns the pipeline passes through presented a variety of safety and logistical challenges.

In addition to our successful management of stakeholders, various innovative techniques were employed. For example, Horizontal Directional Drilling was needed at challenging locations like road junctions, roundabouts and river crossings. Equally, where open-cut methods at river crossings were used, the process of electrofishing was implemented before excavation - which essentially is an efficient way of sampling fish populations, determining abundance, density and species composition. Our successful use of electrofishing ensured no permanent harm to fish populations on this project.

In addition, while this very project was active Listowel won a national 'Tidy Towns' award. This speaks volumes about how successful the team was in ensuring all work were carried out in a thoughtful, tidy and sustainable manner in a busy urban environment.



CANADA

SURERUS MURPHY

Seizing new opportunities in Canada

Our Canadian joint venture, Surerus Murphy Joint Venture (SMJV) constructs large diameter pipelines throughout Western Canada, focusing on major oil and gas projects in Alberta, British Columbia and Saskatchewan.

This year's initial focus was on the Trans Mountain Pipeline Project, which saw SMJV selected as the preferred bidder of one of the sections at the end of 2017. However, with permits and jurisdictional delays pushing the project's start date back to late 2019, SMJV's focus shifted. Quickly and admirably, new opportunities were established to ensure 2018 was a successful year.

Relationships developing with Canada's biggest oil and gas players

A number of new contracts and project extensions were secured in 2018, which is testament not only to the strength of the Canadian pipeline market, but to SMJV's emergence as a trusted supplier.

SMJV began phase two of APPL (The Alberta Products Pipe Line Ltd.) fuel line partnership, following on from the successful completion of phase one in 2017 in Alberta.

Excellent project delivery performance led to the additional award of the third phase. The growing relationship we've built with these companies puts us in an excellent position for securing lucrative contracts in the future.

Our relationship with TransCanada was also strengthened in 2018. Two new major projects were secured under the three year master services agreement, in Alberta and British Columbia respectively, with a combined value of \$280m CAD. Furthermore, we were delighted to gain further investment from TransCanada in the \$40bn CAD Coastal GasLink project. Starting early 2019, SMJV will be constructing 140km of the huge 670km 48" pipeline, with work expected to continue until 2022.

SMJV secured full ISO certification and safety accreditation, and a remarkable 1.8 million man hours were completed in 2018 without a single LTI (Lost Time Incident).



APPL Calgary project showcases SMJV's skill and unity

The APPL Calgary Utility Corridor project was the second phase of a multi-product line.

The project was constructed to the southeast of Calgary around the city perimeter. It consisted of 28km of 12" pipeline, and as is typical for semi-urban assignments, the route traversed many obstacles including motorways, canals and industrial areas.

In total, the project included 10.2km of trenchless crossings, all completed by Horizontal Directional Drilling (HDD). Some 20 individual HDDs were completed with a peak of five rigs drilling simultaneously – two of which were in excess of 1,600m in length.

With such a significant proportion of the work being completed by trenchless technology, co-ordination of resources was paramount and SMJV passed the test with flying colours. The project was delivered on time, on budget, and with an exemplary HSEQ performance of zero LTIs. The team completed all weld repair and joint coating repair work with zero defects, which represents an industry-leading result from a quality perspective.

Surerus Murphy highlights

- Phase two of the APPL Calgary Transportation Utility Corridor project completed, and phase three awarded
- Two new contracts won with TransCanada; North Montney Mainline and the Hythe Lateral Loop, worth a combined \$280m CAD
- Coastal GasLink project extended from early 2019 into 2022, with further investment secured
- Other contracts completed including Saskatchewan integrity digs and the High Pine clean up, which are both for Enbridge
- 1.8m man hours completed without a single LTI
- Full ISO safety accreditation secured



Calgary Lateral Project - welding



Calgary Utility Corridor Project - clearing



North Montney Mainline Project - backfilling



North Montney Mainline - bending

GOVERNANCE AND RISK



Alastair Kerr
Chairman

In the current challenging climate, a thorough approach to governance and risk management is more important than ever. At Murphy, we are committed to making sure we have the tools and checks in place that can support our growth plan, and ensure we remain a sustainable and successful business that contributes positively to the communities and economies where we work.

I strongly believe this is an area of continuous improvement and development.

From monthly leadership reporting to a new back-office finance system, we are taking steps to ensure we continue to deliver in line with our values. We have also made more improvements in 2018 to develop our approach, which is highlighted in our individual committee reports.

Adopting the Wates Principles

We have decided to adopt the Wates Corporate Governance Principles for Large Private Companies a year early, and have reported on our progress against the six principles below. We welcome this development that will hopefully provide a consistent standard in corporate governance for large private companies to aspire to.

1. **Purpose and Leadership:** An effective Board develops and promotes the purpose of a company and ensures that its values, strategy and culture align with that purpose.

Our purpose is 'Improving lives by delivering world-class infrastructure' in the UK, Ireland and Canada. This is regularly promoted and communicated across our company. Our culture is based on five core values – One Family, One Team, One Murphy; Continually Improve; Never Harm;

Integrity and Respect; and Always Deliver. We launched our sustainable growth plan in 2015 outlining where we want to be and how we will get there. This is then supported through a three year business plan cycle and company objectives agreed, reviewed and refreshed annually by the Board. The delivery of our strategy is underpinned by five key strategic drivers – fit to start; dependable project management; passionate about direct; better engineered; and win-win relationships.

2. **Board Composition:** Effective board composition requires an effective chair and a balance of skills, backgrounds, experience and knowledge, with individual directors having sufficient capacity to make a valuable contribution. The size of a board should be guided by the scale and complexity of the company.

Our Board is chaired by non-executive Chairman Alastair Kerr, and consists of eight non-executive directors and three executive directors. There are four independent non-executive directors (including the Chairman) who have expertise and experience in family-owned business finance, construction, infrastructure and utilities. There are four family non-executive directors who represent the owners of the business. Our Chief Executive Officer, Chief Operating Officer and Chief Financial Officer are the executive directors who sit on the Board.

3. **Director Responsibilities:** The Board and individual directors should have a clear understanding of their accountability and responsibilities. The Board's policies and procedures should support effective decision-making and independent challenge.

The General Executive Committee (GEC), which is chaired by the CEO. This (seven-strong) team of executive directors is supported by the Group Operations Board (GOB), chaired by the Chief Operating Officer, and the Group Strategy and Investment Committee, chaired by the Chief Operating Officer, and the Group Strategy and Investment

Committee (GSIC), chaired by the Group Strategy Director. All of these groups have clear terms of reference that are regularly reviewed. Additionally, responsibility for decision making is governed by our Delegated Authorities Matrix, which reserves certain decisions to the Board if required. We have clear terms of reference in place for the Board and its subcommittees. The Audit Committee is responsible for reviewing the effectiveness of the Group's system of internal financial controls, internal control and risk management systems, and the processes for managing the principal risks facing the Group. The Committee is chaired by independent non-executive director Huw Davies, and is comprised entirely of non-executive directors. Internal Audit is charged with carrying out an annual audit programme and reporting the findings to the committee. The Board delegates authority to manage the business on a daily basis to the Group.

4. **Opportunity and Risk: A board should promote the long-term sustainable success of the company by identifying opportunities to create and preserve value, and establish oversight for the identification and mitigation of risks.**

We established a Risk and Opportunity Board Committee in 2018 to oversee the management of risk and identification of opportunities across the business. The Committee is chaired by independent non-executive director Steve Hollingshead. There is also an Executive Risk and Opportunity Committee (EROC) chaired by the Group Commercial Director and which met six times during 2018. The Group Risk Manager maintains the Group Risk and Opportunity register, and the EROC regularly reviews the top ten risks and opportunities at their meetings. It then reports to the Risk and Opportunity Board Committee on steps taken to mitigate any risks and to realise any of the identified opportunities.

5. **Remuneration: A board should promote executive remuneration structures aligned to the long-term sustainability and success of a company, taking into account pay and conditions elsewhere in the company.**

The Remuneration Board Committee is responsible for setting the remuneration and benefits for the senior executives employed by the business, and for the remuneration policy for all staff. The Committee reviews and approves the long and short term plans to retain and reward senior executives, based on

performance measures that promote the long-term success of the business. The Committee is chaired by independent non-executive director Mike Toms, and is comprised entirely of non-executive directors. The Committee also reviews the Company's Gender Pay Gap report, and approves the strategy for reducing the gender pay gap at Murphy.

6. **Stakeholder Relationships and Engagement: Directors should foster effective stakeholder relationships aligned to the company's purpose. The Board is responsible for overseeing meaningful engagement with stakeholders, including the workforce, and having regards to their views when taking decision.**

The Board regularly reviews and oversees a range of stakeholder information – from client satisfaction data to the results of the annual employee engagement survey. For example, the Board reviews the engagement survey results and agrees the action plans to address key issues raised as part of the survey. It also carries out two project visits a year to meet the delivery teams and discover how they are delivering for our clients.

Murphy executive directors play an active role in engaging with a range of stakeholders in their roles to promote the company purpose – from clients, communities, colleagues and many others. They carried out regular town halls and roadshows across the year to update colleagues on company progress, as well as answering their queries and questions. Along with other senior leaders, they also drove our 'Safestart' programme in early 2018, visiting project sites to reinforce our 'Never Harm' value.

In 2018, we also updated our social responsibility and sustainability policy, which includes a clear focus on working with People and our Partners, as well as proactively engaging with our communities and stakeholders. Other stakeholder engagement in 2018 included formalising our client feedback process to increase engagement; our Pathways group, comprising colleagues from across the company who provide feedback and share information on key issues, who met twice in 2018 and regularly communicate via Yammer; and our charity committee who met ten times in 2018 to agree charitable donations and consider requests from across the business.

AUDIT COMMITTEE



Huw Davies
Independent non-executive director

The Audit Committee is chaired by Huw Davies, an independent non-executive director of Murphy's main Board.

The Committee's membership consists of independent non-executive directors and the family directors.

The Board delegates a number of specific duties to the Audit Committee, in order to assist in the discharge of its duties and to bring independent oversight to the Group's activities.

The Committee's primary concerns are the integrity of the financial statements; effectiveness of internal controls; performance of the internal audit function; performance and independence of the external auditors; and the Group's compliance with legal and regulatory requirements.

During the year the Committee conducted a review of the external auditors and undertook a tender process which resulted in the appointment of Ernst & Young for the 2018 financial year audit.

REMUNERATION COMMITTEE



Mike Toms
Independent non-executive director

The Remuneration Committee is chaired by Mike Toms, an independent non-executive director of Murphy's main Board.

It is responsible for reviewing the remuneration of senior executives, the ongoing appropriateness and relevance of the remuneration policy, determining the policy for the annual pay review, annual bonus scheme and long term incentive plan, and overseeing any major changes in employee benefit structures. The Committee consists of non-executive directors to ensure independence and transparency and family non-executive directors.

In addition to its normal cycle of setting salaries and bonuses for senior executives, and setting targets for the incentive schemes, during the year the Committee made a number of improvements to the operation of its remuneration policy following a review conducted in the previous year. It also successfully implemented the requirements for compliance with gender pay gap reporting which were effective from 2018.

Moving forward, the Committee aims to continue adopting best practice, ensuring the relevant approaches are implemented by Murphy to support its business strategy.

RISK AND OPPORTUNITY COMMITTEE



Steve Hollingshead
Independent non-executive director

The Risk and Opportunity Committee was established by the Board in November 2017. It is chaired by Steve Hollingshead, an independent non-executive director of the main Board.

The Committee's membership consists of the independent non-executive directors and the family non-executive directors.

During the year, the Committee has continued to focus on the management of both internal and external risks at all levels of the business, but in addition, a consistent drive to realise opportunities to ensure we achieve sustainable growth. The increasing level of uncertainty around external factors such as Brexit, have been fully assessed through this Committee to ensure resilience whilst the business continues to grow.

As well as continually reviewing the company's overall approach and effectiveness to managing risks and opportunities, the purpose of the committee is to:

- monitor and manage risks of uncomfortable and critical concern
- review anticipated and probable opportunities for the business
- proactively identify emergent risk and opportunity in the business
- monitor the risk and opportunity management system
- review the risk and opportunity profile for the business
- review the company's codes of conduct, ethics and related corporate responsibility policies.

When selecting our joint venture and supply chain partners, we ensure they are aligned with our risk and opportunity protocols and

comply with our Anti-fraud, Bribery and Corruption (ABC) policies and other critical policies. In addition, we only trade in foreign territories where the legislature is aligned with that of the UK and Ireland.

During the year, the business has embarked on a programme of risk and opportunity maturity enhancement to further increase the business capability, led by our Group Head of Risk Management. This programme includes the enhancement of process and governance, the delivery of role specific competency development, and the improvement of systems to support the delivery of effective risk and opportunity management.

Additionally, the committee has duties covering compliance, whistle-blowing and fraud. These include:

- to review the adequacy and security of the arrangements for its employees to raise confidential concerns about possible wrongdoing in financial reporting or other matters
- ensure these allow proportionate and independent investigation and appropriate follow up action
- review the company's procedures for detecting fraud
- review the company's systems and controls for the prevention of bribery and receive reports on any alleged or suspected non-compliance.

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