Our teams have been providing expertise and solutions covering the complete range of engineering services for over 50 years displaying cutting-edge design skills to solve even the most complex problems. A meticulous approach and attention to detail means we deliver an innovative, efficient and proactive consultancy service to all our clients.

We have the enthusiasm, determination, skill and vision to make a difference and create successful schemes through our holistic approach to engineering and construction. Through our work, our experts have helped to instigate and drive regeneration and development which supplies housing, employment and retail opportunities to the country’s economy.

We build our business and the services that we provide around the needs of our key clients so that we are totally aligned with their vision and objectives. For many of the projects that we have worked on we were originally commissioned to provide one engineering service. However, due to the quality of our work, our relationship with the client and our broad experience and capability, we have, on many occasions, been asked to provide additional services.

The range of engineering services the team provides includes:

- Civil and Structural Engineering
- Mechanical and Electrical Engineering
- Highways Engineering
- Bridges and Structures
- Water and wastewater
- Energy

We offer expertise throughout the project lifecycle, from concept, feasibility and design services to contract preparation, site management, implementation and commissioning.
Our consultants bring a range of expertise to support you through the full life cycle of your project. We provide design, procurement and management across infrastructure such as highways, bridges, sewerage and drainage systems, airports, docks, effluent and potable water treatment plants, flood and coastal defences, and land remediation and regeneration.

Our civil engineering team offers:
- cost, value and risk management of projects on a whole life basis
- integration of environmental considerations to support sustainable practice
- contract preparation and site management
- preliminary appraisals and investment advice
- preparation of tender documentation
- negotiations with statutory authorities and land owners
- legislation advice
- expert opinion at public inquiry, arbitration and court cases
- research and development.
Giant’s Causeway Visitor Centre
The National Trust

Our engineering specialists were commissioned by the National Trust to provide the civil engineering design of the Giant’s Causeway visitors’ centre in Northern Ireland, an attraction which welcomes more than half a million visitors every year. Our involvement in this project lasted more than 6 years. From EIA drafting at pre-planning stage to site supervision, including road, boundary retention and drainage design and advice, incorporating sustainable urban drainage systems we worked on developing value for money solutions and sustainable development for the project.

The centre is rated as BREEAM ’Excellent’ due to the cutting edge techniques employed in the design and supporting infrastructure. It has also received accolades from the Royal Society of Ulster Architects for its sustainable design and was shortlisted for the RIBA Stirling prize in 2013.

A453 Improvement Scheme
The Highway Agency

To address the problem of heavy congestion and a very poor accident record, the A453 Improvement Scheme is upgrading the road between Junction 24 of the M1 in Leicestershire and the A52 in Nottingham.

As contractor’s designer, we are working collaboratively on the preliminary design and statutory procedures, the detailed design and the construction phases of the project. Throughout the process we have pushed the boundaries of technology and developed innovative solutions to challenging problems.

The scheme includes the provision of 9 new bridges, 2 grade separated junctions, 3 roundabouts and a traffic signal controlled junction. During the design process, we have addressed key project objectives by increasing capacity, improving safety, mitigating environmental impacts, and making provision for other road users.

Deep Basement Design
The Light, Leeds

We provided civil and structural design services for the construction of this new leisure and retail centre on a constrained site in the heart of Leeds.

Our demolition specialists provided engineering advice for the demolition of a 17 storey office building which was the former headquarters of Leeds Permanent Building Society. We then designed a solution that would allow excavation of a 5 storey deep basement adjacent to a main highway and Grade 2 listed building. The site was corralled with continuous flight auger piles and the permanent, rock anchored, retaining walls were constructed from the top down as excavation progressed. Once the lowest formation was reached construction of the reinforced concrete frame could commence in a traditional manner.
Your structure must be designed to withstand the conditions of the environment in which it is built. Many factors affect design, all of which will require excellent problem solving skills from a structural engineer.

Our engineering experts develop innovative solutions to the most complex challenges, providing a comprehensive advisory, feasibility and design service. Our consultants provide services to both new build and refurbishment across all the sectors for both public and private sector clients. We support sustainable practice by integrating environmental considerations at the heart of every project.
BUSINESS SCHOOL
MANCHESTER METROPOLITAN UNIVERSITY

The MMU Business School and Student Hub is an inspiring, landmark building that offers a stimulating experience for students, academics, support staff and the general public. From the outset, the University also wanted to create an exemplar low energy building and the experience and knowledge of our team was integral to meeting the stringent criteria.

With three separate blocks rising from four to eight storeys and wrapped in pleated dichroic glazing, a building of this complexity and ambition is bound to throw up unique challenges. Our team undertook extensive research to develop manageable and effective solutions that did not compromise the architect’s vision. Our application of best practice design and renewable technologies was essential in helping the building achieve its BREEAM 'Excellent' rating.

VINE COURT
UNIVERSITY OF LIVERPOOL

Vine Court Eco-Residences are part of our ongoing relationship with the UoL to update its student accommodation through a combination of new buildings and refurbishment of existing sites. Vine Court provides over 700 high quality, self contained bedrooms and includes a large restaurant, conference and social facilities and retail units.

Our inclusion of environmental features, such as air source heat pumps, green roofs and heat reclamation, helped achieve a BREEAM 'Excellent' rating for the project. We were also able to meet the restrictions of a very tight programme, which required completion in time for the start of the academic year, through our innovative use of rapid construction techniques and off-site manufacturing.

BURY DIVISION HEADQUARTERS
GREATER MANCHESTER POLICE AUTHORITY

Following a mini design competition we were appointed to deliver full multi-disciplinary team services for this new, three storey divisional headquarters at Bury. We developed the project from RIBA stages A-L, delivering a feasibility study and full detailed design, preparing all contract documentation and negotiating the complex planning approval.

On this difficult site, which lies on a floodplain and contained areas of industrial contamination, our expertise and close collaboration with all stakeholders ensured that the completed station supports the current and future operational capability of GMP and is a beacon project in the regeneration of the region.
REDMONDS BUILDING

We were appointed by LJMU to design and deliver the M&E services for a new, 12,700m teaching and office facility that is part of the University’s Connected Village Masterplan. The building is designed to stimulate interaction so understanding the working practices and interconnections between the various departments using the building was vital for us. Our designs presented cost effective solutions that suit the overall building operation as well as the wide range of individual room types.

Mechanical engineering, the design, construction and operation of machines and structures, walks hand in hand with electrical engineering, the technology of power generation and transmission to make buildings and infrastructure work.

Our expert engineering team provides wide-ranging capabilities to deliver original design and installation, advice on ongoing maintenance and operation of existing and new installations and, planning for future expansion and re-engineering to meet changing needs.

Our dynamic team of experienced professionals are involved in a wide range of projects throughout the UK and overseas, enabling us to respond to all of our clients’ mechanical and electrical engineering requirements.
COMMUNITY FIRE STATIONS
GLOUCESTER FIRE & RESCUE SERVICE

At four separate sites in the Gloucester and Cheltenham area we provided the core roles of M&E, civil and structural engineering for four new community fire stations. In collaboration with the contractor led team, we designed robust and flexible structures that accommodate the functional requirements of both the modern fire service and the local community.

As sustainability was a key driver for the project, we incorporated design features such as green roofs, rainwater harvesting, solar thermal panels and recycling of training water. Our inclusion of highly efficient building services, such as VRF refrigerant heat pumps, helped to further reduce running costs.

Across the varied sites we delivered a range of technical solutions that maximised operational usage and have provided training and educational facilities that will serve long into the future.

ENERGUS CENTRE
WORKINGTON

Sited on Britain’s Energy Coast, Energus is a dedicated Centre of Excellence delivering a range of training, education and business support services to the nuclear industry. We delivered detailed design services for this £19m facility, which provides engineering workshops, general teaching space, I.T. facilities, lecture theatres and science laboratories.

In keeping with our multidisciplinary approach, we also provided sustainability advice and Part L modelling and calculations. Our approach included several low energy technologies, such as photovoltaics, mechanical ventilation and rainwater harvesting, which helped the project to achieve a BREEAM 'Very Good' rating.

CORE TECHNOLOGY FACILITY
MANCHESTER INNOVATIONS LTD

Following our success with the Manchester Biosciences Incubator (MBI) we were commissioned by the same client for the design of a new style of laboratory in an adjacent building. The CTF would accommodate expanding biotech companies from MBI and also provide new, cutting-edge facilities for Manchester University in an integrated research environment.

We worked closely with end-users to determine the design parameters. Our team’s extensive experience provided a fully coordinated building easily adapted to accommodate changes in research use. The success of our flexible approach is demonstrated by the incorporation of a major refit part way through the project with no major impact on either the structural frame or the primary mechanical and electrical plant.
A reliable and robust infrastructure is key to the success of any major development. Efficient transport, energy, water and waste, and communications systems are crucial to meeting the challenges of delivering cost-effective and sustainable schemes.

Our experts supply innovative, sustainable transport and energy solutions and deploy emerging technologies to reduce carbon footprints and minimise risk for our clients. On brownfield regeneration projects and new build residential and mixed use sites we develop pragmatic, innovative and sustainable plans to enable development and maximise commercial potential.

The range of infrastructure services we provide includes:

- Environment (water, sanitation and waste management)
- Transport (road, rail, cycling and pedestrian planning)
- Energy (renewable, networks and energy efficiency)
- Social infrastructure (educational, medical and community facilities)
KIRKSTALL FORGE, LEEDS
COMMERCIAL ESTATES GROUP

This major development on a 25 hectare brownfield site next to the river Aire will deliver around 1,000 new homes plus commercial, retail and leisure facilities alongside a new railway station linking the site to the centre of the city.

We were initially appointed to provide multi-disciplinary engineering advice to develop the site infrastructure. This included a review of previous site surveys to identify gaps and agree a targeted mitigation strategy to manage costs as the overall design developed.

From the early stages the remediation strategy we designed provided a flexible solution that allows any area to be adapted to commercial, retail or residential use without constraining the rest of the development. Similarly, the primary infrastructure was developed such that it could be implemented in a phased manner to support the masterplan.

QUEEN ELIZABETH HOSPITAL, BIRMINGHAM
BIRMINGHAM NEW HOSPITALS JOINT VENTURE

For this major healthcare project we bought together a multidisciplinary team to provide civil, structural, highways, drainage, geo-environmental, ecological and transport planning services.

Through intelligent sequencing of works and a phased site access scheme we successfully managed complex changes to the road infrastructure whilst maintaining all clinical services and necessary traffic routes. In addition to the expected infrastructure works on a project of this scale, a significant challenge was the diversion of the Elan Valley aqueduct, supplying half of Birmingham’s fresh water, in order to enable construction.

Our project team worked closely with the client to minimise construction impact, costs and programme risks and to integrate existing facilities with the new development.

KINGSWOOD PARKS, HULL
KINGSWOOD PARKS DEVELOPMENT CO.

Kingswood Parks is a 188 hectare greenfield site to the north of Kingston-upon-Hull. This long term mixed-use development includes areas of commercial, retail, leisure and housing with future proposals which include a local shopping centre, a medical facility and primary schools.

In a phased programme, we worked on the design and construction of over 2km of main highways infrastructure, including four roundabouts, that facilitated 52 hectares of serviced land to be released as part of the residential and commercial development. Significant earthworks for greenways were required to open up the development land and we also provided additional design and management services for foul and surface water drainage, two foul water pump stations and the primary utilities and substations.
We understand the impact construction programmes place upon the environment and that sustainability is now a central part of any development. Our proactive approach to this challenge adds value, supports planning applications and brings economic, environmental and social benefits to both businesses and communities.

Our expertise in sustainability and environmental consultancy covers a wide range of skills, from sustainability appraisals and planning statements, through to construction advice, resource efficiency, energy evaluations, water and waste management, and carbon accounting.

As part of a multidisciplinary consultancy we have an in-house team of BREEAM assessors who comprehensively analyse and improve the environmental performance of buildings, from design through to management. We can also call upon specialists with complementary skills in ecology, landscape architecture and environmental impact assessment.

We have considerable experience working with clients to design sustainable residential and commercial developments and to deliver these through a full range of structural engineering, mechanical & electrical, social, economic, environmental and planning services.

The experience of our consultants and their innovative approach creates simple, yet effective solutions that help address the energy issues at hand and also shape procedures to protect the future of our clients’ developments.
ALLERTON BYWATER NETWORK CENTRE
NETWORK SPACE

Part of the UK’s second Millennium Community, this project was the first industrial development in the north of England to achieve a BREEAM ‘Excellent’ rating. Our design gave careful consideration to the use of recycled and reusable materials and incorporated significant environmental features in order to meet the ambitions of both the local authority and the HCA.

The 16 workspace units have created 100 new jobs for the area in a development that includes sustainable urban drainage systems, bicycle facilities, natural ventilation and daylighting and environmentally sensitive mechanical and electrical systems.

PLECKGATE HIGH SCHOOL
BALFOUR BEATTY EDUCATION

We have provided multidisciplinary services on three schools in Blackburn and Darwen as part of the Building Schools for the Future programme. In order to achieve BREEAM 'Excellent' standards and meet very stringent low-carbon energy targets, sustainability was an inherent part of the project development.

Our scheme for Pleckgate High School created a ‘smart’ solution, with integrated building and non-building service systems, which now provides modern, highly flexible teaching space. The project also includes a standalone Energy Centre with biomass plant and storage, enhanced sports facilities and integrated external space. Each stage of our design and procurement process was carried out with comprehensive consultation involving the local authority, community, school teachers and pupils.

BANGOR AURORA AQUATICS CENTRE
NORTH DOWN BOROUGH COUNCIL

Opened in 2013 this £38m flagship leisure centre houses a 50m Olympic standard swimming pool alongside a family fun area, two squash courts, a fitness studio and multi-use sports hall.

Working in partnership with the architects and contractors our creative design solutions were key to the success of this development. Our experts provided civil and structural, transport, fire engineering and acoustic consultancy services and developed innovative, cost-effective solutions,

Initiatives such as SUDS, rainwater harvesting, storm water attenuation and the reuse of excavated rock as graded stone fill were adopted to meet the BREEAM 'Excellent' sustainability target. The project has recently been recognised with an award from the Institution of Structural Engineers for its ‘positive impact and demonstrable benefit to the community’.
The challenges and problems caused by global warming, ageing infrastructure, and population growth have a significant impact on providing clean water and safely disposing of wastewater and sewage.

Our specialist teams are experienced in all aspects of water and wastewater engineering projects. They have a detailed understanding of the chemistry and dynamics of the water regime and its interaction with the environment, and use this knowledge to provide a range of services from pre-feasibility studies through planning, design, procurement, construction supervision to commissioning stages.

We frequently undertake work on behalf of local authorities and government bodies, as well as major commercial and industrial organisations, on major new developments and regeneration projects. This includes large scale municipal wastewater collection and treatment schemes, water mains and services, sewerage networks, foul pumping stations and sustainable urban drainage systems.

From our involvement in water treatment and distribution projects through to the provision of advice and services to private developers, we have built up significant experience and expertise in the sector.

STONEYFORD INTEGRATED CONSTRUCTED WETLAND (ICW)
NORTHERN IRELAND WATER

This flagship project for NI Water is an industry leading example of how wastewater treatment can be integrated into a local indigenous ecosystem.

We were appointed to assess options for replacing the overloaded wastewater treatment works serving the village of Stoneyford to the northwest of Lisburn. Having considered conventional treatment options we developed an ICW solution that would satisfy the onerous discharge consent standards set by the Environment Agency.

Our work on this scheme included specialist surveys, hydraulic modelling, flood risk assessment, detailed design, procurement and construction. We successfully guided the project through to planning approval for the first fully sustainable ICW in Northern Ireland. In addition to providing the area with low energy, low maintenance and low cost wastewater treatment the proposals will create an environmentally friendly and richly biodiverse wetland site.
Severe flooding events and growing recognition of the impact of climate change have raised awareness of the causes and effects of flooding in the UK. As a consequence, all new development is now subject to a rigorous pre-planning review in respect of flood risk.

Our specialist teams have practical experience in all types of flood risk management and the expert knowledge to provide full flood risk assessments for potential development sites. We have established relations with a wide range of stakeholders, including the Environment Agency and land drainage authorities, helping to ensure compliance with flood prevention policy and minimising delays in gaining planning permission.

We help clients and communities to effectively manage flood risk from a wide range of water distribution sources, whether from the failure of flood defences or from the impact of severe events. Our teams provide support from initial feasibility, through to planning inquiry and expert witness advice and on to detailed implementation of projects.

We have an excellent track record on complex and challenging sites, bringing innovative, cost-effective solutions that maximise land values whilst delivering significant environmental benefits.

KINGSWOOD AREA ACTION PLAN
KINGSWOOD PARKS, HULL

In common with much of Hull, the area around Kingswood Parks is low lying and requires sensitive treatment of flood risk issues. Following the development of an Area Action Plan by Hull City Council, we were appointed to advise on the proposals and liaise with local stakeholders.

Our analysis of flood risk allows for the staged allocation of land for housing as sequential mitigation measures are developed. We also provided designs for wide embankment replacement defences, which include climate change adaptation measures, and model tested these through a variety of residual risk management scenarios.

The mitigation scheme we proposed stores excess water within ‘aqua greens’ and includes a secondary level of protection that conveys flood water to areas of created habitat away from the housing infrastructure. This innovative approach provides a commercially viable scheme that delivers multiple benefits to an area where suitable housing land is in short supply.
Expert advice is essential in determining an appropriate course of action, be it in relation to a doubtful statutory decision, to inform a major acquisition or in determining liability.

Within our Engineering Teams we have a number of eminent experts with experience in due diligence, planning inquiries and litigation. Our highly professional and widely experienced teams are familiar with the requirements of CPR 35 and will provide the necessary dedicated support that court processes require.

Particular areas of expertise within the engineering team cover:
- analysis of flooding events
- highway and drainage design
- development infrastructure
- structural design
- building services

WHITEHOUSE FARM APPEAL
BELLWAY HOMES (NORTH EAST)

Following refusal of an application for a residential development on 32 hectares of greenfield land, we were appointed by Bellway Homes to support its appeal. The site, in North Tyneside, lies upstream of an SSSI and in a locality that had recently suffered from flooding. Understandably, there was considerable local concern about the proposals.

We have long experience in undertaking flood risk assessments and recommending mitigation measures and our expert gave evidence in relation to a range of sensitive issues including flood risk, drainage, Sustainable Drainage Systems (SUDS) and water quality.

Subsequent to the appeal, the Planning Inspector’s report noted the validity of local objections but praised the comprehensive and well reasoned evidence of both the main proof and rebuttals we provided. The Inspector found in favour of Bellway and development has now commenced.
For over 25 years we have been a respected name within the UK Nuclear industry, providing strategic advisory services from multidisciplinary design through to operational support and decommissioning consultancy.

In addition to providing specialist services to support a number of proposed new build locations we have completed extensive work at Sellafield and for a number of other nuclear clients across the Nuclear Decommissioning Authority estate. This includes project management, geospatial surveying, asset care management and bespoke civil and structural engineering solutions.

We have expert teams located across the UK providing a comprehensive and independent consultancy service for the design, engineering assessment, procurement and management of public and private nuclear assets. On both framework and direct contract appointments, our teams add real value through a combination of reliable experience, detailed industry knowledge and strong working relationships with an established nuclear supply chain.

Whether you are looking at a new build, modification decommissioning project or maintaining an asset in use we can support you at each stage of the project lifecycle. From initial scoping and business planning through feasibility, optioneering studies, project implementation and asset care we deliver effective, cohesive solutions under the control and governance of our nuclear specific Project and Design Management team.

The range of services this team provides includes:

- Asset management
- Engineering
- Environmental management
- Geographical information systems
- Geospatial, laser scanning, topographical and precision surveying
- Hierarchy of controls
- Nuclear new build
- Nuclear procedures & policies
- Nuclear safety
- Project management
- Seismic design and assessment
- Security
- Transport planning
WYG EXPERTISE ACROSS A RANGE OF SERVICES

PLANNING
- Planning Applications
- Planning Obligations & CIL
- Compulsory Purchase Orders
- Project Management & EIA Coordination
- Site Assessment & Planning Strategy
- Development
- Plan Representations
- Planning Appeals & Expert Witness
- Planning Policy & Development Management
- Stakeholder & Community Consultation

URBAN & LANDSCAPE DESIGN
- Masterplanning
- Urban Design
- Landscape Architecture
- Landscape & Visual Impact Assessment (LVIA)
- Building Design
- Regeneration
- Visualisation Services & GIS

TRANSPORT
- Transport Assessment & Modelling
- Sustainable Transport
- Road Safety
- Highway, Bridge & Drainage Design
- Highway Construction Supervision
- Pedestrian, Cycle & Public Transport Schemes
- Intelligent Transport Solutions
- Planning Appeals & Expert Witness Services
- Policy Advice and Compliance
- Public Realm Infrastructure Design

ENVIRONMENT
- Ecology
- Environmental Impact Assessment (EIA) & Environmental Permitting
- Sustainability Appraisal & Strategic Environmental Assessment (SEA)
- Noise, Air, Light, Vibration and Odour Assessments
- Archaeology & Heritage
- Hydrogeology & Water Quality
- Geotechnical Design & Assessment
- Site Investigation
- Contaminated Land & Land Quality Assessment
- Environmental Due Diligence & Expert Witness
- Pollution Response & Management
- Remediation Design & Management
- Waste & Resource Management
- Local Authority Waste Services
- Minerals Planning
Our people are designers, project managers, engineers, planners, environmental specialists and business service professionals who together form the teams our clients need to make their project ambitions come to life.

Working from the earliest project stages we offer all the expertise needed to make challenging concepts possible. We then bring together the right teams whenever and wherever our clients need them to make projects happen.

We believe our ability to make a difference through our work and leave a lasting positive legacy is what sets us apart.