

Design, build and maintenance

Water and wastewater solutions



About United Infrastructure

We are a dynamic and growing business dedicated to partnering with our clients to improve the utility and social housing infrastructure that is essential to communities across the UK.

Our work plays an important role in achieving the UK's net zero ambitions. We deliver infrastructure that supports the energy transition, improve the energy efficiency of thousands of homes, and address industry skills gaps by providing formal qualifications and training in the net zero space.

Utility Infrastructure business

Utility Infrastructure designs, builds and maintains critical water and wastewater assets on behalf of the UK's water companies. Through long-term frameworks and capital project delivery, we deliver innovative solutions focussing on safety, reliability of assets, stakeholder engagement whilst minimising environmental and carbon impacts. Core specialisms and solutions include:

- End to end project management from detailed design to completion and handover
- Design solutions
- Clean water infrastructure and non infrastructure solutions
- Wastewater infrastructure and non infrastructure solutions
- Developer Services; new mains, services and connections
- Maintenance, renewal and refurbishment of existing assets and networks
- Meter services
- Security solutions



AFECO - United Infrastructure company

AFECO is a dynamic, specialist engineering services, solutions and products provider.

As a United Infrastructure company, AFECO delivers specialist services including:

- Concept to detailed engineering
- Process, mechanical and electrical design
- Advanced controls systems and panels
- Troubleshooting and asset optimisation
- Installation, commissioning and support

Find out more: afeco.co.uk

Peter Duffy Ltd - United Infrastructure company

Peter Duffy Ltd is a specialist civil engineering contractor specialising in water infrastructure, and brings decades of experience and a strong reputation in delivering major engineering solutions for water networks.

As a United Infrastructure company, Peter Duffy Ltd employs various methods, including open cut, pipejacking, and auger boring, to install wastewater networks at different depths and diameters.

Their expertise encompasses new installations, replacements, and the rehabilitation of existing networks, as well as the construction of wastewater infrastructure, including pumping stations, storage tanks, shafts, and treatment facilities.

Their experienced engineers also perform connections using techniques such as hot tapping and line stopping and work at pumping stations, treatment plants, and reservoirs, acknowledging the complexities involved in these settings. Additionally, their 'DrainsAid' division offers a comprehensive range of drainage services, including:

- CCTV inspection, cleaning, and desilting
- Excavation and repair
- UV lining
- Hot cure lining
- Ambient cure lining
- Manhole rehabilitation
- Jetting

Find out more: peterduffyltd.com



Design solutions

We have extensive experience and in-house capabilities to provide a comprehensive range of design services, allowing us to deliver high-quality infrastructure, process, and MEICA (Mechanical, Electrical, Instrumentation, Control, and Automation) engineering projects. Our team supports clients throughout both the concept and detailed design phases, including performing the role of Principal Designer (CDM). This ensures that health, safety, and design risks are managed effectively from the outset. Our engineering-led solutions cover a broad spectrum of design and technical services, detailed below.

- CAD and 3D modelling
- Detailed design specifications
- Temporary works design
- Process engineering and design
- Mechanical, electrical and ICA engineering and design
- Electrical schematics
- P&IDs and SLDs
- Control philosophy and FDS preparation

Our qualified resources attend site to carry out asset condition surveys, investigations, trial holes, feasibility studies and surveys, providing early engagement to identify:

- Potential technologies
- Appropriate techniques including potential for no dig/trenchless solutions
- Pipeline routings
- Advise on programme impacts
- Likely third party liaison, consents and permits required

Our designs are fully CDM compliant. We agree in advance the design delivery strategy with clients. All designs are subject to strict scope control and change management. We carry out comprehensive design checks and design assurance.



Construction infrastructure capital projects

We design and construct water and wastewater assets as part of capital growth, maintenance, refurbishment and construction projects for a wide range of UK water companies, industrial clients and network owners.

We work in urban, rural, sensitive and high hazard environments. United Infrastructure has a 30 year track record. We deliver projects ranging in size from small scale civil construction to managing work at a Programme level comprising multiple projects over a defined time horizon.

We work under a range of commercial mechanisms including NEC4, burgandy, EPC, depending on client needs and project requirements.

Programme activities include:

- Land access, noticing, permits, managing third party approvals
- Procurement
- Engaging specialist supply chain (archaeology, geology, mining)
- Stakeholder management
- Programme management
(Primavera P6, resources and budget)
- CDM health and safety management
- Environmental reporting

Clean water infrastructure solutions

We work collaboratively with the majority of the UK's water companies, asset owners and infrastructure organisations. We deliver solutions to maintain, build and refurbish clean water assets.

Projects are delivered as part of capital growth, maintenance and large turnkey construction schemes, ranging in size from large diameter pipes to new mains and connections.

- Pipework installation and refurbishment
- Large diameter pipe construction and repair
- Mains cleaning using a variety of techniques
- Mains rehabilitation
- Lining solutions
- Condition surveys and inspections
- Diversions
- Upsizing
- DMA analysis, flow and supply analysis
- Installation of monitoring equipment, district meters, hydrants
- Pressure management and pressure reducing valves
- Tunnels and shafts
- Dams, aqueducts, water retaining structures
- Inspection and maintenance of aqueducts, bridges and tunnels.

Infrastructure capital projects

Wastewater infrastructure solutions

Our construction and design engineering expertise has been deployed to address client issues including CSOs, network capacity and spills. Our environmentally conscious solutions include:

- Civil engineering and construction
- Asset maintenance
- Replacement and repair of access hatches, covers and frames
- Storm Spill Reduction (SSR), fitting non return valves to outfalls
- Third party sewer and pipeline diversions

We design, build and maintain a wide range of wastewater assets including:

- Large scale tanks, chambers, sludge tanks, pre-fabricated modular concrete tanks and built in situ-concrete tanks.
- Stormwater management systems (tanks, overflow channels and outlets)
- Attenuation tanks
- Rising mains
- Pumps
- Outfalls
- Wastewater pipelines and sewers
- Nature based solutions including SUDs
- Storm tanks including overflow structures, CSOs
- Pipe bridges
- Wet wells
- Sewage pumping station (refurbishment)



Construction non-infrastructure

United Infrastructure also includes AFECO, a specialist engineering services and solutions provider to the water and wastewater industry. Together, we deliver non-infrastructure solutions that complement our core infrastructure projects.

We have extensive process, mechanical, electrical, and ICA (MEICA) expertise, which allows us to offer integrated services, solutions, and products that span the complete project delivery lifecycle. Our engineering-led teams can provide stand-alone bespoke solutions or fully integrated turnkey services, depending on the client's needs.

Our experienced engineering led teams offer stand-alone bespoke solutions through to integrated turnkey solutions. Our core specialisms include:

- Process design and engineering
- Optioneering to improve existing assets
- MEICA
- Asset inspection, condition assessment and optimisation
- Construction of assets for water and wastewater treatment
- Asset refurbishment
- Site alterations including chemical dosing
- Process change, conversion of liquid to cake, new methanol systems to enhance secondary treatment
- Tertiary solids removal
- Flow balancing



Construction non-infrastructure

Water and wastewater non infrastructure asset solutions

AFECO's technical engineering skills are complemented by United Infrastructure's expertise in civil design and build services to provide comprehensive solutions for a variety of non-infrastructure asset types.

- Tanks, septic tanks, RGF tanks and controls new build and refurbishment
- Screens; insitu inlet screens, CSO screens and modular screens
- Optimisation and controls
- Aeration including solutions and improvements from new energy efficient blowers
- Access structures, concrete bases and enabling works including roads and tracks
- Modular solutions including package plant and temporary plant
- Pumps and pump panels

Supporting activities for non-infrastructure projects

We recognise that often a whole 'systems' approach is needed for some projects. We are able to combine our expertise in both infrastructure, non infrastructure and civils engineering together. We work with major asset owners to support projects through:

- Existing site alterations
- Site clearance and landscaping
- Civils works including, hardstanding, concrete structures, bases and kiosks
- Drainage works
- Tank replacement



Developer services

We carry out works on behalf of our clients for end customers including developers, New appointments and variations (NAVs), self-lay providers, household and non household customers.

Outstanding levels of customer service

We are experienced in liaising closely with third parties to ensure access, consent, permits and notices are in place to enable swift delivery of services. We have a reputation for outstanding customer service; evidenced by our major clients achieving the highest levels of regulatory customer service performance (D-MeX).

What we offer

Our developer services solutions include:

- Water Mains laying; offsite and onsite
- Water Service pipe laying
- Wastewater connections
- Installation of valves, chambers and other network fittings (as required by the new installation design)
- Diversionary works for clean water distribution assets where requisitioned by customers
- Diversionary works for minor sewerage assets where requisitioned by customers
- Site surveys
- Backfill and reinstatement of public highways and private land
- Meter installations
- Installation of bulk meters (including NAV sites)

Our flexible approach and excellent standards of work management planning means we are familiar with the specific requirements for delivering works located at private developer sites, unadopted highways, public highways, third-party land and customer properties.

Suitably qualified personnel and adherence to industry standards

We know the importance of adherence to industry service level agreements (SLAs), drinking water quality standards and high standards of service. Our resources are fully qualified to WIRS/WIAPs/EUSR hygiene standards.

All mains and services connections works are strictly audited and controlled to meet regulatory requirements for testing and chlorination prior to commissioning. From a health and safety perspective, as principal contractor we oversee construction, design and management regulations (CDM).



Maintenance

Since 2000, we have been providing comprehensive repair and maintenance services to key water clients across the UK, offering tailored solutions for both clean water and wastewater systems. Our team is highly experienced in managing and maintaining a wide range of infrastructure, ensuring that clients benefit from reliable, cost-effective services designed to meet regulatory requirements and operational needs.

We provide full wrap-around support to deliver services effectively:

- Site surveys to identify early constraints and traffic management requirements
- Planning and Scheduling works using our bespoke work management system
- Stakeholder and customer liaison, permits & streetworks management
- Materials procurement and management
- Management & completion of documentation, asset records, as-built files, asset information
- Maintenance, renewal and refurbishment of existing assets and networks

Our clean water solutions include:

- Clean water repair and maintenance
- Leakage detection and repair
- Mains burst repair
- Large diameter pipe repairs
- Mains rehabilitation including asbestos cement (AC), mains replacement programmes and zonal studies
- Network apparatus; repair, maintenance and installation including; hydrants, stop taps and air valves
- Standby service
- Site investigation services including trial holes, surveys and asset condition monitoring
- Mains cleaning including use of air scouring, and ice pigging

Our wastewater maintenance solutions include:

- Site audits
- Asset optimisation
- Troubleshooting operational assets and sites
- Process testing
- Telemetry systems, SCADA and PLC systems to facilitate remote monitoring and control of assets
- Installation and maintenance of monitors including CSOs, flow monitors and flow control equipment

Lead Pipe Replacement

We work with the UK's major water companies to deliver comprehensive lead pipe replacement programmes. Our services include:

- Identification of potential high lead pipe properties through surveys and investigations
- Full replacement of lead pipes from the main to the service pipe, including common supply pipe replacement
- Customer service programmes to guide customers through the end to end process
- Testing and commissioning
- Regulatory reporting

Metering services

We deliver a range of meter solutions for water industry clients:

- Meter installation for domestic, industrial and developer services (including NAVs)
- Meter maintenance and meter exchange programmes
- Meter optants, compulsory metering programmes
- Smart metering
- Meter stock control
- Bulk meters
- Meter testing, meter sizing

We work effectively with both meter suppliers and technology providers to deliver an integrated service to clients.

Pre-site surveys are conducted prior to meter installation to check for aspects including access arrangements, traffic management, existing boundary box meter location, presence of sensitive customers.

This information is fed into applications for Streetworks notices and permits. We ensure our meter installation resources undertake rigorous training. This includes meter types, pairing, recording data. Our employees are competent and familiar with all relevant industry standards, processes, and procedures.

Meter types and smart meters

We have the capability to install a range of meter types and sizes, including automatic meter reading (AMR) and smart meters, from 15mm size upwards. Meters are installed as part of our client's reactive and proactive programmes. Our track record is associated with predominantly external

meter fits; working in the highways to carry out a full installation programme of works including excavation, boundary boxes, meter fit, network and supply checks.

Smart meter deployment programmes are a critical component of water companies' water efficiency and demand management strategies. We are working with both smart meter manufacturers and network providers (IoT & LoRaWAN). We have the capability to deliver, install and commission smart water meters.

Quality standards

We adopt a comprehensive inspection and audit regime. Compliance with manufacturer's standards, industry specification, and strict data accuracy for billing purposes are continually measured.

Stock and meter management

We work closely with meter manufacturers to receive stock, relevant training, guidance and support. We offer secure storage and stock management services. Systems are in place to monitor stock usage.

IT systems

We have developed an in-house Total Mobile solution which allows end to end tracking and recording of works, from initial receipt of work information from our clients, planning and scheduling through to meter installation. We use real-time electronic data interchange to provide meter details and recordings.

Security Solutions

As an organisation, we ensure our works are delivered in compliance with:

- Security and emergency measures directive (SEMD) statutory legislation
- Protective security guidance (PSG)
- Water UK security standard (WUKSS)
- NPSA specification

We deliver security solutions, particularly relevant to high security sites, protection of strategic assets and temporary security. During early engagement and design of works, we work with procurement and manufacturers to ensure we implement solutions which adhere to relevant security ratings. Our experience of working on strategic assets, critical UK sites means that we understand the processes required:

- Ensuring the relevant workforce have received security vetting before deployment
- Security briefings, training and appropriate

management system in place

- Access controls, site standards and site specific security risk assessments
- Control of electronic data, files and design drawings

Example solutions

Installation of temporary security requirements to deter, detect, delay and respond to unauthorised access to clients sites.

- Security fencing, CCTV, gates, hatches
- Temporary security plan, security controls
- Hostile reconnaissance procedures
- Perimeter security & PIDS

Civil activities to facilitate security including:

- Concrete work (slabs and kiosks, etc)
- Hard standing, ducts, excavation and steel fabrication

ESG

We are committed to setting industry leading ESG standards, focussing on decarbonation, social value and benefitting the local communities in which we work. We are aligned to the TOMs Framework and UN Sustainability Goals. We focus on carbon reduction in the delivery of projects:

- Consideration of low carbon solutions during design and construction
- Full carbon accounting including use of carbon reporting software; providing clients with carbon data for reporting purposes
- Identification of BNG solutions
- Selection of 'blue/ grey solutions and low carbon techniques to minimise environmental impact

Together we achieve more



For further information on how
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