

AGILE. EXPERIENCED. COLLABORATIVE.

# WHITFIELD CONSULTING SERVICES

Award-winning civil engineering consultancy  
specialising in sustainable infrastructure projects  
that contribute to global Net Zero targets.



WHITFIELD  
CONSULTING  
SERVICES

# CIVIL ENGINEERING FOR TRANSPORTATION & INFRASTRUCTURE PROJECTS

**At Whitfield Consulting Services (WCS), we specialise in civil engineering design for the infrastructure sector, delivering tailored support for projects that drive the transition to a low carbon future.**

With technical proficiency, a responsive approach, and a commitment to collaboration, we support every stage of a project – from feasibility to final delivery. We know how to work within tight constraints, to rigorous standards, and in challenging environments. By prioritising our clients’ needs from the outset, we adapt our services to deliver practical, compliant, and effective solutions for every project.

## THREE CORE VALUES GUIDE OUR WORK

**Agile.** We respond fast, think flexibly, and stay close to project progress on site.

**Experienced.** Our team has a proven track record of delivering infrastructure projects across multiple sectors.

**Collaborative.** We work effectively alongside other design disciplines, contractors, and stakeholders.

## WHY CLIENTS CHOOSE WCS

- We pride ourselves on delivering creative and practical engineering solutions
- Detailed understanding of technical and regulatory demands
- Capability in both temporary and permanent works across multiple infrastructure environments
- The ability to respond quickly and solve problems efficiently
- Wealth of site-based experience
- Understanding other specialists and the needs of contractors and end clients



“Clients trust WCS to deliver practical solutions to complex civil engineering challenges across the infrastructure sector. We’re known for our agility, responsiveness, and expertise.”

**Asa Whitfield,**  
Managing Director, WCS



# OUR SERVICES

**At WCS, we deliver tailored civil engineering design services to support successful infrastructure delivery.**

Our team’s experience in providing engineering solutions to end clients and Tier 1 contractors enables us to navigate challenging infrastructure environments while meeting stringent technical, safety, and environmental standards.



## OUR SERVICES INCLUDE:

- Feasibility and concept design
- Detailed civil and structural engineering design
- Temp works design and coordination
- Design assurance
- Tender assistance and bid support
- Advanced CAD & BIM packages
- Survey support
- Construction support
- Multi-disciplinary design with trusted partners
- Principal Designer role

## SPOTLIGHT: TEMPORARY WORKS DESIGN AND CO-ORDINATION

WCS is a trusted provider of temporary works design and coordination for infrastructure projects. With extensive experience across the sector, WCS temporary works support ensures safety, minimises delays, and controls costs from the outset.

### OUR COMPREHENSIVE SERVICES INCLUDE:

- Temporary works design, checking, and assurance
- Construction sequencing & temporary conditions
- BS 5975-compliant process coordination
- Provision of Temporary Works Coordinators (TWC)
- Platform, lifting operations, bridges, and structural design services.
- Access solutions

WCS’s capability in both permanent and temporary works enables integrated, practical designs that anticipate construction challenges and keep projects safe, efficient, and on track.



**They’re really good, really professional. They do exactly what they say they will in terms of deliverables and they’re really lovely people to work with.**

**Sharon Harrison,**  
Senior Project Manager, Hitachi Energy



# SECTOR EXPERIENCE: RAIL PROJECTS

From electrification and signalling upgrades to bridge refurbishments and track access solutions, our team supports the delivery of safe and cost-effective rail infrastructure.

We understand the technical demands of working within the rail environment, including health and safety, access, planning, and operational constraints. Our expertise covers the design and delivery of key civil components, including:

- Railway bridges, footbridges and Access for All schemes
- Stations, platforms, tunnels, and interchange upgrades
- Substations, switching compounds, associated lineside equipment
- Ground retention structures embankments and slope stability analysis
- Station, bridge and track drainage
- Rail systems support
- Road/Rail Access Points (RRAPS)
- Cable trough and duct routes
- Over and under-track crossings
- Overhead Line Equipment (OLE) foundations and support structures
- Signalling structures and foundations



# CASE STUDIES: RAIL PROJECTS

## DOWNNS PARK ROAD OVERBRIDGE - REVITALISING ONE OF HACKNEY'S HISTORIC RAILWAY BRIDGES

Client: Murphy | End client: Network Rail

The Downs Park Road Overbridge — a 154-year-old structure in Hackney — required urgent replacement due to significant structural deterioration. Appointed by Murphy, WCS delivered civil engineering design support from early stage optioneering through to construction.

WCS' involvement began at the ES3 stage, under Network Rail's PACE (Project Acceleration in a Controlled Environment) process. Following successful design delivery, WCS was retained to provide technical support throughout the construction phase, including during the planned blockade.

Network Rail praised the project as an exemplar of collaborative working and efficient delivery under pressure.

**"Thank you, Whitfield Consulting Services, for such a seamless design and for the technical support."**

Kieran Moore, Engineering Manager – CRE-C, Murphy



## £2.9 BILLION PICCADILLY LINE UPGRADE

Client: UK Power Networks Services (UKPNS) | End client: London Underground Limited

This £2.9bn programme is upgrading substations and installing 10km of HV cabling within Victorian tunnels. WCS is working across multiple packages to provide civil and structural engineering design, surveys, switchgear room layouts, gauge and cable route design and assessments, ground investigations, and tender support – all delivered while the line remained operational.

WCS has already provided civil engineering design for key substations and infrastructure supporting new high-voltage power supplies across the line. The work included upgrades to the Manor House and Cobourg Street substations, with approximately 10km of 11kV and 22kV cabling installed.

Designing within the constraints of Victorian-era tunnels presents challenges, especially while maintaining full operational service. WCS delivered structural and civil design, wall removals, new switchgear layouts, surveys, and route assessments.



## READING WEST STATION NEW TICKET OFFICE

Client: Nationwide Engineering | End client: Network Rail

As part of efforts to improve accessibility and passenger experience, a new ticket hall and gate line were constructed at Reading West Station. WCS provided civil and structural engineering design and architectural services through our supply chain. All delivered with 3D BIM techniques to ensure seamless integration.

The project involved two constrained urban sites, requiring detailed coordination and construction support. WCS led regular multi-disciplinary design reviews, supported stakeholder engagement, and provided on-site engineering input throughout construction.



**"The design was of a very high quality...I hope we get to work with such pragmatic and experienced design houses on future electrification projects."**

Project Manager,  
Capital Delivery Eastern, Network Rail

# SECTOR EXPERIENCE: POWER & ENERGY

We help deliver the infrastructure needed to meet the world's low emission goals, contributing to a sustainable and secure energy future. Our work supports renewables networks, power storage and grid stability, and other forms of low-carbon energy generation.

Our Power & Energy experience includes:

- Grid & DNO projects
- Transmission & Distribution substations
- Grid stability projects
- Synchronous Condensers
- Static Synchronous Compensators (STATCOM)
- Gas Insulated Switchgear (GIS) buildings & structures
- Solar energy installations
- Battery Energy Storage Systems (BESS)
- Cable routes
- Waste heat integration
- Sector specific distribution networks: airports, ports, nuclear, and defence
- Electric vehicle charging infrastructure

Power & Energy is one of the most regulated engineering sectors, so it is vital to seek specialist civil engineering support to avoid costly mistakes or delays on these projects.



## CASE STUDIES: POWER & ENERGY

### LONDON POWER TUNNELS 2 - FUTURE-PROOFING THE CAPITAL'S ELECTRICITY

Client: Linxon | End client: National Grid

A £750 million investment by National Grid, the London Power Tunnels 2 project is constructing 32.5km of underground tunnels to safeguard future electricity supply. These 3m-diameter tunnels house high-voltage cables linking substations across the capital.

As part of Package 6, WCS is delivering civil design services to support critical substation upgrade works.

Our team has played a key role in developing civil infrastructure at the New Cross and Bengeworth Road 400/275kV substations, working in BIM360 to ensure smooth integration with wider project teams. The project's complexity demands precise coordination of utilities, site access, and structural detailing within dense urban environments.

We've adopted an agile and responsive approach, enabling us to adapt quickly to evolving site conditions and client requirements without compromising on quality.

This flexibility has been recognised by the client, resulting in WCS being entrusted with additional design scope as the project progresses.

### HORNSEA 3 - CONNECTING THE WORLD'S LARGEST OFFSHORE WIND FARM

Client: Hitachi Energy | End client: Ørsted

Hornsea 3 Offshore Wind Farm, developed by Ørsted, will generate up to 2.85 GW of clean energy – enough to power over three million UK homes. The onshore converter station at Swardeston will convert electricity from high-voltage direct current (HVDC) to alternating current (AC) before feeding it into the National Grid at Norwich Main. To accommodate this significant increase in capacity, the Norwich Main substation is undergoing a major upgrade and expansion, enhancing its transmission capabilities and supporting the integration of renewable energy into the national network.

WCS is supporting Hitachi Energy by delivering detailed civil engineering design associated with four new air-insulated switchgear (AIS) feeder circuits as part of the substation expansion. This includes high-voltage plant equipment foundations; portable relay room foundations; and cable containment systems.

WCS's involvement extends well beyond the detailed design stage. As the project transitioned into construction, our team continued to provide hands-on support, ensuring design intent is maintained and challenges are swiftly addressed on site. Acting as the Temporary Works Coordinator, WCS plays a pivotal role in managing and coordinating temporary works, safeguarding construction safety and efficiency. This ongoing engagement reflects our commitment to delivering value throughout the project lifecycle and our ability to respond dynamically to evolving site requirements.

### MONK FRYSTON BESS - POWERING 500,000 HOMES WITH BATTERY ENERGY STORAGE

Client: M Group Energy Services |  
End client: SSE Renewables

Once complete, the Monk Fryston project will be one of the UK's largest Battery Energy Storage Systems (BESS), with the capacity to power over half a million homes for up to two hours. It marks SSE Renewables' largest battery storage investment to date. WCS is delivering civil and structural engineering design for both the BESS compound and National Grid connections, covering earthworks, drainage, firewater containment, substructures, and access.

As part of our scope, we incorporated sustainable solutions such as screw pile foundations, soil stabilisation, and prefabricated equipment bunds – accelerating the construction programme, reducing carbon, and ensuring long-term performance.

Our work supports the safe and efficient delivery of the infrastructure necessary to stabilise renewable energy nationally, reflecting WCS's experience in designing resilient, sustainable civil infrastructure for energy projects.



I am looking for the consultant to bring experience in the areas that I work in. WCS has expertise in areas that are relevant to me. I trust them.



Theo Mantzioros,  
Head of Systems Design, UKPNS

## SPOTLIGHT CASE STUDY: UXBRIDGE MOOR SUPPORTING THE FUTURE DEMANDS OF THE UK'S POWER NETWORK

Client: Murphy | End client: National Grid

**Set to become the largest new substation on the UK Grid network by capacity, Uxbridge Moor is a flagship project in National Grid's infrastructure upgrade programme to address growing demand and ensure long-term system reliability.**

WCS was appointed by Murphy to deliver the scope of civil and structural design services, including early-stage feasibility input, detailed design, and construction-phase support. Key civil packages included the internal access roads, preliminary design of reinforced concrete foundations for supergrid transformers and gantries, a 1.5m access road, and the design of a 26-metre bridge crossing the River Alder Bourne.

These are among the scheme's most technically demanding and environmentally sensitive elements, with access to the site through a flood plain and an old quarry, soft ground conditions, and overhead electrical lines constraining construction.

Several engineering challenges were addressed through innovative design approaches. WCS designed a bridge featuring a weathering steel and reinforced concrete composite deck, ensuring long-term durability with minimal maintenance while reducing overall structure depth. The bridge design was developed to suit low headroom plant due to overhead line constraints, while still delivering the necessary structural capacity and hydraulic performance. Ground modelling and drainage strategies were tailored to the site's floodplain location, with road formation and structures designed for long-term durability under adverse conditions.

Design work was delivered in close collaboration with Murphy and National Grid, with specific attention to tight programme constraints, construction logistics, and integration with electrical infrastructure.

Uxbridge Moor will add vital capacity to the grid, supporting digital infrastructure, decarbonisation, and economic growth.

"This project exemplifies the scale and complexity of infrastructure needed to support the UK's evolving energy system. It's been a privilege to contribute to a scheme of this significance, and working alongside Murphy's team has ensured strong collaboration and technical alignment throughout."

**Jeremy Barnes,**  
Technical Director, WCS



## SECTOR EXPERIENCE: CIVILS & STRUCTURES

**WCS provides civil and structural engineering services for all infrastructure environment, offering both permanent and temporary works design support from concept to construction.**

We are experienced in working within constrained environments such as airports, nuclear sites, substations and rail corridors, where precision and safety are essential. By applying modular and off-site techniques, our engineers create solutions that balance constructability, efficiency, and sustainability for long-term performance.

Our experience includes providing temporary and permanent works designs for:

- Bridges, roads, and highways
- Substructure and superstructure design for buildings
- Retaining walls & slope stability
- Drainage and culverts
- Geotechnical assessments
- Existing asset surveys, structural assessments, strengthening, and repair design
- Flood risk & sustainable drainage systems (SuDS)



# ENGINEERING A LOW CARBON FUTURE

## SUSTAINABLE BY DESIGN

**We're proud to support infrastructure that enables low-carbon energy, sustainable transport, and resilient power networks. But how we achieve Net Zero is just as important as the outcomes themselves.**

From early feasibility through to delivery, our team considers how to reduce carbon throughout a project's life cycle – from the material efficiency and the construction techniques used on site, through to asset decommissioning and recycling.

### PROJECT EXAMPLE: DOWNS PARK ROAD OVERBRIDGE

Sustainability was a key design driver for the Downs Park Road Overbridge refurbishment in Hackney. By optimising steel sections, incorporating precast components, reducing construction time and using fibre-reinforced polymer (FRP), WCS helped deliver a 25% reduction in carbon emissions – around 88.7 tonnes CO<sub>2</sub>e.



### PROJECT EXAMPLE: NATIONAL GRID PORTABLE RELAY ROOMS

WCS led the foundation redesign for four Portable Relay Rooms at a National Grid site. By transitioning from a ground-bearing raft to perimeter strip foundations, we reduced concrete use by over 50%, delivering both material and cost efficiencies. We continuously refine our designs from feasibility through to detailed design to maximise sustainability.

## RECOGNISED FOR LEADERSHIP IN SUSTAINABILITY

Our work has been recognised across the industry, leading to WCS being named winner at the New Civil Engineer Awards in the Environmental, Social and Governance (ESG) Leader category.

“WCS has long been an advocate of sustainability in construction, and we were honoured to receive the award. As civil engineers, we have a responsibility to drive change from within; for me, nothing matters more than creating a more sustainable model for future generations to build on.”

**Natalja Petkune,**  
Director, WCS

“One of the reasons I joined WCS is because of its commitment to sustainability and supporting the shift to renewable energy in the UK through our work on projects such as BESS, rail electrification and many more.”

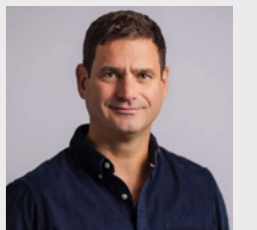
**Shane Govender,**  
Principal Civil Engineer, WCS



## A MESSAGE FROM OUR MANAGING DIRECTOR

“We're passionate about the critical role civil engineering plays in creating more sustainable infrastructure, and we're committed to doing our part. We believe our greatest impact lies in the projects we deliver: targeting those that promote sustainability and help to achieve Net Zero goals.”

**Asa Whitfield**



# OUR COMMITMENT TO EXCELLENCE & INNOVATION

**At WCS, we believe that investing in our people and embracing the latest technologies is essential to delivering high-quality client services. We are committed to staying at the forefront of industry standards and regulations, tools, and best practices.**

“We consistently aim to improve standards and quality in the service we provide. That starts with dedicated people and experienced teams right across the company working every day to learn and grow.”

**Nick Lowe,**  
Director, WCS



## LEARNING & DEVELOPMENT:

We foster a culture of continuous learning, providing opportunities for professional growth and knowledge sharing. Continuous learning, combined with practical tools and project management support, ensures our engineers can apply their skills effectively and respond to each project's needs.

- Lessons learnt workshops to transfer insight between projects and strengthen collective capability.
- Collaboration with suppliers and industry partners through technical briefings and product demonstrations.
- Support for external training and attending industry events through ICE, IStructE, and other professional bodies.
- ICE training scheme, where WCS is an ICE Approved Employer, able to support our engineers through initial professional development (IPD) and on to professional qualification.
- Encouragement and assistance with other professional registration and career development.

## INNOVATION, TECHNOLOGY & PROJECT MANAGEMENT:

We combine modern tools with strong project management to deliver smarter, more efficient outcomes. These tools help our teams align design with construction and operational needs, and reduce risk, rework, and waste.

### We specialise in:

- 3D structural analysis and design
- Advanced geotechnics and foundation design software including complex strata and embedded foundation types, 3D modelling analysis and design.
- Use of BIM and 3D design to support precise planning, coordination, and delivery
- CAD/BIM workflows that embed constructability and ensure compliance across all projects
- Creation of fully rendered 3D and 4D animations to enhance visualisation and engagement
- Streamlined planning, tracking, and delivery through robust project management systems
- Proficiency in Common Data Environments including Bentley Project Wise, BIM 360, and ACC.

# A DIVERSE TEAM, UNITED BY PURPOSE

**With offices in London, Scotland and Northern Ireland, we are a dynamic and expanding company driven by a clear vision and powered by a vibrant, committed team. We are growing stronger all the time as we welcome new members from a range of backgrounds and professional experiences.**

Equality, diversity & inclusion underpin our identity as a company and are fundamental to our core values. This is reflected in our recruitment policy, training, and commitment to internal forums, where we hear feedback from the full team.

## COMMUNITY AND SOCIAL RESPONSIBILITY

We are passionate about the future of civil engineering and our role in supporting a more diverse, inclusive, and sustainable industry.

Our team regularly engages with local schools, colleges, and universities through STEM outreach initiatives, career fairs, and mentoring programmes – inspiring the next generation of engineers and helping young people see the opportunities available within our profession. From one-week school placements to year-long university scholarships, we provide hands-on experiences that build confidence, skills, and awareness of engineering opportunities.

We also contribute to initiatives that promote diversity and inclusion across the sector. WCS engineers volunteer time and expertise to support women in engineering, mentor students through the Kingston University Beyond Barriers programme, and participate in initiatives such as the Women's Engineering Society's Lottie Tour and ICE Girl Guide Scout outreach events. These efforts help broaden participation and representation within STEM.

Our outreach and early engagement work were recognised nationally when WCS was shortlisted for the Excellence in Outreach accolade at the Inspiring Women in Construction & Engineering Awards.



“One of the best parts of working at WCS is knowing we're doing more than delivering infrastructure. Whether it's mentoring future engineers or raising funds for local causes, we're encouraged to give back – and that's something I value deeply.”

**Celine Mahfoud,**  
Civil/Structural Design Engineer, WCS

# GOVERNANCE, ACCREDITATIONS, & AFFILIATIONS

Consistent excellence is underpinned by a strong foundation of formal governance and industry-recognised standards.

We hold accreditation for ISO 9001 (Quality Management), ISO 14001 (Environmental Management), and ISO 45001 (Health & Safety Management). These accreditations guide our operations and ensure high standards across quality, sustainability, and team wellbeing.

WCS is also a member of key industry schemes, including:

- Audited by Railway Industry Supplier Qualification Scheme (RISQS)
- CIRAS (Confidential Incident Reporting and Analysis System)
- Achilles Link-Up



## SOME OF OUR CLIENTS:

**Balfour Beatty**



**AMCO GIFFEN**

**AUREOS**



**VolkerFitzpatrick**

**linxon**





WHITFIELD  
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