



## SERVICES AND ACTIVITIES

# STRUCTURES

FM Conway offers a dynamic range of services and capabilities, combining technical skill, strategic planning and strong stakeholder collaboration to deliver complex projects safely, efficiently and to the highest standard.

From large-scale refurbishment projects, asset management and maintenance programmes through to structural upgrades and full asset renewals, we offer award-winning service with integrity, excellence, precision and confidence.

### INFRASTRUCTURE PROJECTS

- Bridge engineering and construction (road, rail, pedestrian) - steel, iron, reinforced concrete, brick and composite structures
- Provision of temporary accommodation, buildings and business property (pre-fab)
- Highway structures - gantries, barriers, maintenance and build (road, rail, pedestrian), tunnels and underground structures
- Embankments and river walls, earthworks and stabilisation/slope stability modelling (FOS analysis, slip surface modelling)
- Regeneration schemes, hard and soft landscaping packages, public realm and enabling works
- Retaining structures for flood defence and other flood defence structures
- Retaining walls and other retaining structures
- Rail-related structures - bridges, track support, tunnels, concrete repairs and platforms
- Heritage structures - conservation, restoration and renovation, including reporting and advice, structural assessments
- Basement & vaults
- Underground & subterranean structures, including utility tunnels
- Marine and coastal structures (jetties, sea walls, quay walls, etc.)
- Architectural lighting design, installation and management
- Culverts and outfall structures and headwalls, local river construction
- Tank foundations and bund walls
- Steel frame, reinforced concrete, timber structure, and masonry structure projects

## ASSET MANAGEMENT

- Principal, general, and special bridge inspections
  - Structural integrity assessment of culverts, underpasses, gantries, sign structures, and load-bearing capacity assessments, including after flooding, impact, settlement, or subsidence
  - Safety inspections post-failure or damage, structural condition surveys and structural health monitoring systems
  - Drone/remote structural inspections - delamination, concrete condition and acoustic monitoring
  - Inspection reports and remedial works recommendations
  - Structural condition surveys for concrete, steel and masonry structures
  - Defect classification and structural risk scoring
  - Non-destructive testing (NDT) - ultrasonic testing, rebar location/detection, half-cell corrosion potential, cover measurement, hammer testing, muon scanning
  - Structural health monitoring system design (strain gauges, accelerometers, load cells, telltale gauges)
  - Concrete core sampling, settlement and ground movement, and instrumentation and structural health monitoring
  - Load impact assessment (vehicular, crane loads, rail loads, crowd loading) and abnormal load management
  - Fatigue crack detection and repair specification, crack monitoring and structural movement assessment/crack width measurement and displacement monitoring
  - Bridge load rating and capacity assessment and load testing of bridges and other structural elements
  - Assessment of existing structures to BD/DMRB/Eurocodes or local standards
  - Forensic engineering investigations (collapse, cracking, deflection, deterioration)
  - Movement joint design and settlement analysis
  - Remediation and strengthening design following failure and impact damage assessment (vehicle strikes, vessel impacts, crane collisions)
  - Tunnels and tunnel management services, including tunnel systems, fire mitigation and ventilation design, and computational fluid dynamics/gas flowing
  - Utilities and services supporting structures and pipe subways maintenance and management
  - Bridge and structural maintenance and management
  - Heritage assets - conservation, restoration and renovation, including reporting and advice, cast metal working and welding, material analysis and structural assessments
  - Asset management, including forecast and planned programme development
  - Public art and statue installation and maintenance
  - Emergency and reactive service support, including mobilisation of interim stabilisation measures
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## STRUCTURAL REFURBISHMENT & TECHNICAL SERVICES

- Bearing replacement & maintenance
- Expansion joints
- Post-tension special inspection
- Quality assurance checks on structural materials - concrete mix testing and specification, steel material selection and certification verification, timber grading and suitability assessment
- Specialist coatings, painting and corrosion protection, including licensed system application, general and industrial painting
- Cathodic protection and anti-carbonisation treatments
- Concrete repairs and proprietary repair systems
- Structural reinforcement and bridge strengthening or widening
- Deck replacement sequencing and design checks
- Water management systems and application
- Temporary works retaining structures and excavation supports, including bridge temporary works design (jacking, lifting, bearing replacement), structural design for jacking and temporary load transfer, and cofferdam and marine temporary works design
- Scour risk protection systems, assessment and countermeasures
- Excavation supports (sheet piles, king post walls, soil nails, anchors), sheet piling and tie rod systems, pile design, axial/lateral capacity verification, pile cap and foundation-soil interaction models
- Steelwork connection and fabrication
- Reinforcement detailing (RC drawings and schedules)
- Structural analysis, assessments and field testing, strengthening and retrofitting design
- Parapet and barrier refurbishment and impact load structures
- Temporary bridges and structures



## DESIGN, CLIENT MANAGEMENT & CONTRACTUAL SUPPORT

- Early contractual involvement and investigations
- Feasibility studies and structural design reports
- Value engineering and cost optimisation
- Sustainability and embodied carbon optimisation
- Temporary works design, management, review & verification
- Basement, foundation, substructure and retaining wall survey and design recommendations
- Conceptual structural design, detailed structural design and calculations, including design optimisation against client needs and general early contractor involvement
- Forensic engineering and failure investigation
- Monitoring plan design for settlement, vibration, tilt, and strain
- Vibration analysis (floors, machinery, footfall)
- Traffic and pedestrian management
- Foundation and geotechnical structural design (piles, pads, rafts, ground beams)
- Principal contracting and CDM support (design phase risk management), including contractor liaison and design change management, coordination with architects, M&E, EA, Network Rail, TfL, local authorities, UKPN, etc
- Technical presentations and briefings
- Risk workshops and design review meetings
- Training for client staff on structural awareness and regulatory requirements and updates
- Project management, scheduling and budgeting cost control
- Consultation, needs identification and investigation
- Retaining structures design, reinforcement schedules and clash detection for structural systems
- Assistance during insurance claims and structural disputes, expert witness reports for legal or insurance cases
- Building regulations compliance and submissions and planning support (structural aspects)
- As-built verification and certification
- Technical approval support during certification (CE/UKCA for structural components), including verification and independent checks (Category II & III checks)
- Sequencing plans and method-dependent structural checks
- Construction stage analysis (phased loading, staged erection modelling)
- Technical specifications for structural materials and systems and other technical queries
- Risk modelling and consequence assessment for critical infrastructure, risk assessments (structural, construction-stage, operational) & method statements for structural works

### FM Conway

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