Specialist monitoring services for dams and reservoirs
The importance of monitoring the performance of dams is widely accepted but, monitoring shouldn’t just be a tick-box exercise to satisfy the Reservoirs Act. We provide a range of monitoring services to help dam and reservoir managers and engineers optimise the ongoing performance of their assets, providing increased confidence in the continued functioning of your dams and reservoirs throughout their lifecycle.

SERVICES
- Existing instrumentation audits – we establish whether your existing monitoring systems can be put back into service
- Legacy instrumentation – our experienced engineers are familiar with taking readings from most dam instrumentation
- Instrumentation consultation – we seek to understand your precise monitoring needs and demonstrate where improvements might be made
- Monitoring system design – our range of supply chain partners and program of testing new instrumentation systems ensures we have the flexibility to select the right instrumentation and technologies for the job
- Installation – we offer a full supply and installation service, with our own experienced in-house engineers undertaking the work
- Data visualisation & management – automatically display your data through Calyx OMS™
- Servicing & maintenance – we help to define a maintenance and support schedule, essential for the reliable ongoing functioning of your monitoring systems
- Active Support – we proactively monitor your data delivery to identify and analyse any issues before they become serious, and potentially costly.

BENEFITS
- Real-time, continuous measurements so that changes can be identified early and more cost effective corrective actions taken
- Reduction in the number of personnel required to collect and evaluate data, which reduces labour costs
- Reduces the need for lone workers on site and improves health and safety
- Minimises carbon footprint, with fewer site visits required
- Easier retrieval of data from remote or inaccessible locations
- Improved data accuracy and reduced inaccuracies attributable to user error
- Access to more data, providing better insight to support infrastructure maintenance and retirement planning
- Opportunity to increase data sampling frequency with minimal additional cost.

Understand your asset’s behaviour with our range of monitoring services

Reduce cost, risk and environmental impact with automated monitoring

Automated data acquisition provides many advantages to a dam monitoring campaign, but the importance of engineers taking manual readings and observing on site changes cannot be overlooked. Through close consultation, we develop a fit-for-purpose monitoring system for your unique asset, whether that be automated, manual or a combined approach. The benefits of automated systems supporting manual inspection include:

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Understand your asset’s behaviour with our range of monitoring services

Supporting vital decision making, Calyx™ is a secure web-based data management and visualisation platform. Its user-friendly graphical interface allows quick and easy interpretation of large amounts of instrumentation data from multiple sources, regardless of project scale. It is fully configurable to suit your unique requirements and accessible online 24/7 from any Internet-connected device.

KEY FEATURES
- Simple ‘dashboard’ view to summarise site conditions at a glance
- Access data from all of your sites through a single portal
- Customisable, scrollable/scalable maps and plans, including image overlay functionality
- Multi-level alarming for thresholds, rate of change and relative change, all with full logbook integration
- Advanced graphing engine for customisable plots, including wind rose displays
- Scheduled data downloads and automated reporting
- Geo Asset interfaces providing georeferenced links to asset information, including images, websites and documents
- Hosting on Amazon Web Services (AWS) servers, compliant to ISO 27001, providing dedicated connectivity and scalable processing power.

For 30 years, SOCOTEC Monitoring UK has provided specialist design, installation and data visualisation services for bespoke geotechnical and structural monitoring systems for clients throughout the UK.

During this time, our team has built unrivalled expertise in the delivery of these services for dams and reservoirs, so we understand the unique challenges which come with working in this environment. From servicing legacy instrumentation through to installing the latest wireless data acquisition technologies, we have an in-depth knowledge of the range, benefits and limitations of the instrumentation systems required to deliver the valuable data you need.

This is why our clients – which include almost all of the UK’s water authorities – can depend on our ability to deliver a full range of monitoring services to ensure the reliable functioning of their assets long into the future.
DETECT EARLY SIGNS OF DETERIORATION WITH PRIME

Developed by the British Geological Survey, PRIME (Proactive Infrastructure Monitoring and Evaluation) is a new remote condition monitoring and decision-support system for assessing the internal physical condition of safety critical geotechnical assets.

Combining state-of-the-art geophysical ground imaging technology with innovative data telemetry and web portal access compatible with Calyx™ OMS, PRIME lets you ‘see inside’ vulnerable earthworks, providing early warnings of asset deterioration.

The PRIME technology is based on non-invasive Electrical Resistivity Tomography (ERT), a geophysical imaging technique that is sensitive to compositional variations in the subsurface as well as changes in groundwater saturation and the presence of contaminants.

The benefits of using ERT include the ability to view volumetric information, composition and moisture content within the asset.

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<table>
<thead>
<tr>
<th>KEY FEATURES</th>
<th>BENEFITS</th>
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<tbody>
<tr>
<td>http:// web page interface with secure login</td>
<td>Access from any location on any Internet-connected device</td>
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<td>Fully autonomous with measurements scheduled to run at given times during the day</td>
<td>Setup and forget</td>
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<td>Capability to connect to 256 electrodes with a limit of 1024</td>
<td>Options to deploy 2D, 3D or borehole arrays</td>
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<td>Fully automated data collection and delivery stream linked to data processing and visualisation</td>
<td>Visual indication of complex subsurface processes</td>
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<tr>
<td>Interface to CALYX-PRIME. Integration of measurement data into proactive user interface. 2D and 3D visualisation of assets including additional point sensor and video data. Ability to set alarm levels linked to SMS user alerts</td>
<td>Fully integrated measurement and visualisation package. Integration of point sensor ground truth measurement data. Alarm limits linked to SMS user alerts</td>
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<tr>
<td>Reactive monitoring capability</td>
<td>High density data during critical events</td>
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<td>SDI interface capability</td>
<td>Ground truth available from single platform</td>
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<td>Measurement data stored locally then relayed using GSM/mobile network link</td>
<td>Automatic data delivery</td>
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<td>System housed in a standard GRP enclosure</td>
<td>Discreet deployment</td>
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<tr>
<td>Powered from high capacity 12v batteries charged from 40W solar array</td>
<td>Long operational life between site visits</td>
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