

**Investigation
and evaluation**

**Monitoring
and maintenance**

**Seismic monitoring
and early warning**



**Resistivity
Imaging**



**Seismic
Tomography**



**Ground
Penetrating
Radar (GPR)**



**Wireline
Borehole
Logging**



**Seismic
Monitoring**



www.damsafetygroup.com

The widest range of geophysical and seismic techniques services and technologies to address non-invasive investigation and the maintenance and monitoring of Dams, Embankments and Levees.



The member companies of the Dam Safety Group offer proven solutions for the evaluation and monitoring of safety and subsurface ground characterisation issues for new build or existing Dams and related hydrological projects.

Together with market leading real time seismic Earthquake Early Warning Systems supported by a wide range of alerting technologies.



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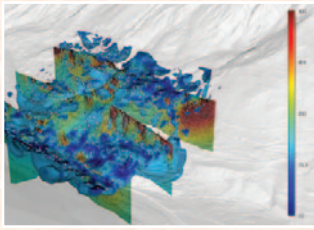
Wireline
Borehole
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Seismic
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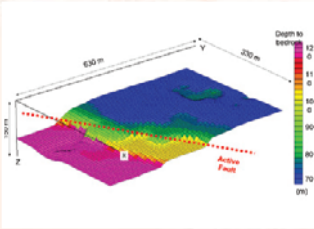
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Resistivity Imaging

IRIS INSTRUMENTS

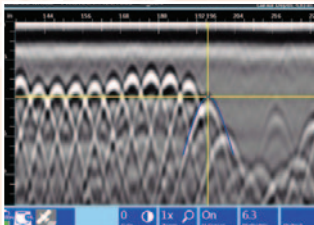
- Multi-channel electrical resistivity imaging (2D and 3D) to define the internal integrity of dams and locate potential points of failure
- Monitoring dam seepage, water saturation, piping and leakage paths
- 3 dimensional characterization and monitoring of dam slopes
- 2D and 3D imaging of lateral dam slopes to prevail potential landslide risk of over topped dams



Seismic Tomography

GEOMETRICS

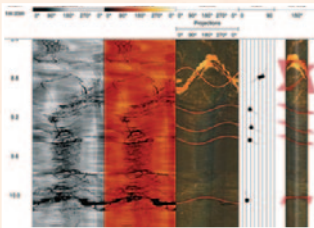
- Characterise ground conditions in terms of shear wave velocity, rippability, bedrock mapping and soil condition
- Identify faults and related structures
- Soil type in levees
- Active and Passive Surface Wave Techniques



Ground Penetrating Radar (GPR)

GSSI

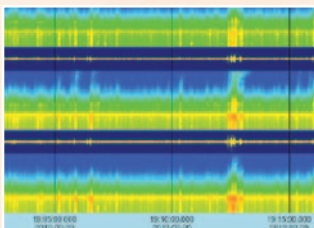
- Non-destructive imaging of the subsurface and manmade materials
- Characterising Internal Structures
- Detection of cavities
- Concrete inspection and geotechnical investigation of dams, earthen levees and embankments
- Reservoir and stilling basin examination



Wireline Borehole Logging

ROBERTSON GEO

- Characterise ground conditions in terms of condition, stiffness, fractures and lithology
- Gain an understanding of the groundwater conditions
- Investigate the condition of existing structures associated with dams



Seismic Monitoring

KINEMATICS

- Monitor earthquakes and structural response with business continuity decision making
- Provide installation, training, maintenance, operational support for very high system availability
- Deliver services from seismic hazard and risk assessment to performance-based earthquake engineering

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The Dam Safety Group brings together a group of member companies ideally positioned to use proven geophysical technology, services and products for Dam site investigation and monitoring together with seismic monitoring via earthquake early warning and evaluation systems.



The cost effective and flexible deployment of these technologies provides the characterisation of on-site ground conditions by the use of data acquisition both real time and for analysis of the subsurface properties for the important evaluation of hydrological, geological and construction issues.

Geophysics technology can provide effective rapid deployment to provide subsurface information, continuous evaluation and monitoring throughout the structures life. It is reliably non-invasive and can be integrated with other forms of ground surveys to build a visual understanding of the overall subsurface of the site.

There are significant risks for dam structures in earthquake-prone locations. Facility Managers/Operators will be required to decide to stop operation and implement lifesaving evacuation or to minimise loss by continuing operation. Earthquake monitoring systems assist such decision making by predictive data and evaluating structural damages immediately after earthquake events.

Non-invasive or destructive techniques

Regular monitoring of Dams

Early warning detection of geotechnical problems

Assists the design and build of remedial projects

Assists to assess remedial work after completion

Identifies damaged areas within the body of the Dam

Locates fractures, voids and zones of seepage

The Dam Safety Group is a co-operative family of Companies from within the OYO Corporation of Japan; a corporate voice of the environmental, international resources and energy, natural disaster prevention and mitigation and infrastructure maintenance, management and renovation industries.

OYO is a 2200 employee and 460 million US Dollar Global Corporation.

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