

## Case Study

Dam Health Monitoring  
· Thwake Dam  
Wote town, Makueni, Kenya



Solutions>Dam Health Monitoring

### Background

In 2008, the government of Kenya approved the creation of Konza Technology City as a flagship Kenya Vision 2030 project. As a result, the government contracted China Gezhouba Group Company Limited to construct the Thwake Multi-Purpose Water Dam to offer clean and reliable water and electricity for the Konza technopolis, which is under construction. The development is one of the key flagship projects of the Kenya Vision 2030 economic development portfolio, which will provide water, hydropower and irrigation for Konza technopolis, in addition to the counties of Kitui, Makueni and Machakos. The Kenyan Thwake Dam project is located in southeastern Kenya, 120 kilometers from the capital, Nairobi. The project develops water resources for the Axi River by constructing a concrete face rockfill dam to achieve the goal of multi-functional integration of water supply, power generation and irrigation. This tender is the first phase of the Thwake dam project, which mainly includes the design and construction of ancillary facilities such as dams, water diversion systems, power station roads, and permanent camps for owners. The contract period is 53



### Challenge

The Thwake Multi-purpose Water Development Program (TMWDP) comprises a multi-purpose dam for water supply, hydropower generation and irrigation development. Instrumentation can be used to put into effect a monitoring program that provides more absolute and appropriate information in regard to the on-going performance of the dam. For this purpose use of proper instruments is thus very important phenomenon therefore we must choose and know the various instruments used to find different parameters.



### Solution

The dam integrity is carried out by monitoring key areas as follows:

- Main dam foundation
- Dam core
- Dam abutments
- Spillway Wing Walls
- Surface Movements
- Reservoir Level

### Products Used

#### VW piezometers

Measurement of pore water pressure.

#### V-Notch Weir Monitor

Measurement of seepage flows.

#### Data loggers

Multi-channel remote reading and logging with solar panel and back-up battery.

#### VW Portable Readout

Measures all types of vw instruments.

#### Water Level Meter

Measures the water level

#### Multiple Point Rod Extensometer

Measures the locate multiple failure plains and zones movement.



### Contact us

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