

Insights Cesa Aon Engineering Excell

Winning engineers show how it is done

Project takes into account its impact on the surrounding communities

AECOM has won the award for projects with a value in excess of R250m for the Spring Grove Dam and Appurtenant Works as part of phase two of the Mooi Mgeni Transfer Scheme (MMTS-2) for the Trans-Caledon Tunnel Authority (TCTA).

In 2009, TCTA appointed AECOM to undertake the design, construction supervision and project management of the MMTS-2 project in the KwaZulu-Natal Midlands. The dam will supplement water supplies to nearly 5-million downstream domestic and industrial users in Pietermaritzburg and Durban.

The 37m high Spring Grove Dam is the main component of the project, which also included an earth fill embankment, three gauging weirs, realignment of private access roads and the construction of a nine-metre high fish barrier. The Group Five-Pandev Spring Grove joint venture was the main contractor.

Kevin James, AECOM's project manager for the project, says: "The project had to adhere to an extremely tight delivery schedule — construction started in February 2011, impoundment in March 2013 and the construction work was completed in October 2013."

The project provided employment for more than 400 members of the local labour force and many local businesses such as hotels and restaurants benefited from the influx of people during



the project's implementation.

James says there were several non-engineering aspects that had to be taken into account and that "the tranquil social and natural environment in and around Rosetta could not be ignored".

The area holds great cultural history and the trout farming and fishing industry had to be considered while building this dam; for example, San/Bushman rock art from a cave in the dam's basin had to be removed and taken to the Natal Museum to be curated.

A total of 107 graves were found with remains or evidence of existence of a grave in the dam basin and had to be moved.

In addition, 38 households from within the dam basin had to be temporarily relocated to suitable accommodation until permanent replacement houses can either be purchased or constructed.

Construction of these houses has commenced and each family will have full title over their house.

The Inchbrakie Falls, which formed a natural barrier to prevent smallmouth bass from migrating upstream and destroying the trout populations, was to be inundated and the project team

thus had to construct a fish barrier to preserve the trout industry upstream of the dam.

In addition, the construction process caused a significant increase in heavy-haul traffic on the R103, a traditionally quiet road through the Midlands, as materials were being transported to site. Traffic management and mitigation plans were applied to relieve the pressure on this road and to mitigate safety issues.

Public participation was a structured, transparent, inclusive and objective process. Public meetings were held by the environmental monitoring project committee to communicate project progress. Information-sharing newsletters were also distributed at regular intervals.

"This project is a good example of how today's engineers and project teams need to take cognisance of the environment in which we operate. Winning shows that the engineering sector hails this project as a prime example of how engineers should be operating today," James says.

Spring Grove Dam was opened by President Jacob Zuma on November 19 2013.