

Construction of Bozwana Village footbridge

RURAL CONSTRUCTION PROJECTS, which are usually small in monetary terms, can impact greatly on the lives of remote communities. Two such projects have been completed recently, one in the province of KwaZulu-Natal, and the latest one reported here, in the Eastern Cape.

Following hot on the heels of the Pietermaritzburg office SAICE award for the best community project – the Qwasha bridge across the White Mfolozi – SSI's East London office has completed another community-centred project, the Bozwana Village footbridge.

Bozwana is remotely located, approximately 30 km north east of Queenstown in the Emalahleni Local Municipal area, which falls under the Chris Hani District Municipality. The Bozwana Junior Secondary School (Grades 1 to 9) is situated about 300 m from the eastern bank of the White Kei River, which is the main river feeding into the Xonxa Dam, some 10 km downstream. The school serves approximately 400 children, most of whom live on the western side of the White Kei River and were forced to ford the river twice each day to get to and from school.

An extensive 1 300 km² catchment area feeds the White Kei River up to Bozwana Village, resulting in the river being impassable when there is any significant rainfall in the area, particularly in the summer months. A number of accidents have been

reported where children have underestimated the flow rate in the river and were swept away. The Glen Grey Falls, situated some 1,9 km downstream from the bridge site, adds further danger to any person washed away by the river.

THE BRIDGE STRUCTURE

SSI engineers carried out a detailed geotechnical investigation, as well as an environmental scoping report including community participation, all of which resulted in several alternative designs for a pedestrian foot bridge. The preferred structure, in terms of safety and minimisation of environmental impact, was a four-span bridge with an 80 m long steel deck on concrete piers and piled foundations. The bridge structure has been designed to cater for a 1 in 50 year flood and has a deck height of 7,5 m above riverbed level.

CONSTRUCTION PHASE

Construction commenced on 29 January 2007 and was completed on 29 May 2007. In line with the Expanded Public Works Programme, the contractor made use of local labour throughout the construction period.

Construction included:

- Piling to an average depth of approximately 6 m
- Five reinforced concrete piers
- A 1,75 m wide x 1,3 m high lattice type

structural steel deck

- Approximately 55 m³ of gabion work
- Associated minor civil works

The local community were involved throughout the project via a project steering committee with selected members participating in the project site meetings. A community liaison officer was employed full time during the construction of the project.

This project was completed on time and within its R3,165 million budget and Chris Hani District Municipality, the children and the community are pleased and relieved that the river can now be crossed safely. □

PROFESSIONAL TEAM

- **Client** Chris Hani District Municipality
- **Main contractor** Adrocon cc
- **Consulting engineers** SSI Engineers & Environmental Consultants
- **Sub-consultants**
- **Environmental** Pollution Control Technologies
- **Social consultancy** Ikhwezi Development
- **Health and safety** Mzi Consulting cc

1 The Executive Mayor and officials from Chris Hani District Municipality at the bridge entrance, with Petrus Manyumwa of SSI Engineers in the right foreground

2 Bozwana pedestrian bridge over the White Kei River now provides a safe access for learners living on the western side of the river to the secondary school on the eastern side



Source:

http://www.saice.org.za/downloads/monthly_publications/2007/CivilOct2007/#/0