KwaMsane Community Access Roads and Pedestrian Facilities – Phase 2

BACKGROUNDS

Goba (Pty) Ltd were appointed by the South African National Roads Agency Limited (SANRAL) as consulting engineers for Phase 2 of the construction of the KwaMsane community access roads and pedestrian facilities. The roads, which are in the Mtubatuba Local Municipality in KwaZulu-Natal, are situated adjacent to National Route 2 Section 30 near Mtubatuba. The project included the upgrading of three access roads, namely the western collector, the eastern collector and the N2 underpass (which connects the western and eastern collectors) from an existing heavily fatigued gravel seal surfaced road to a continuously reinforced concrete (CRC) pavement.

In addition to the 2.8 km long upgrade of the roads, pedestrian facilities were constructed along the eastern collector and N2 underpass to ensure safe passage for scholars from two nearby schools.

The project was undertaken to alleviate congestion on the N2 passing through KwaMsane where pedestrian and taxi congestion resulted in unsafe road conditions. The project was undertaken as a community upliftment project, with contract requirements stipulating that the community had to benefit fully from the project. The first requirement was that a minimum of 8% of the allocated funding had to be spent on local labour. The second stipulation required that at least 35% of the total project expenditure had to be retained within the community, within the bounds of the Umkhanyakude District Municipality.

High volumes of heavy vehicles from the nearby quarry, poor quality highly weathered in-situ basalt subgrades, low maintenance requirements, and a high labour usage prompted the use of a continuously reinforced concrete pavement (CRCP). In order to maximise labour usage on this project
it was stipulated that concrete would be batched on site by means of mechanical mixers.

Due to the nature of the topography and the alignment of existing infrastructure in the area, drainage on the eastern collector was identified as a crucial element in the design, requiring particular attention. Stormwater outlets in certain areas were located on steep gradients and, due to the high concentration of stormwater, compounded by the addition of outlets from the adjacent N2, resulted in severe erosion and damage to the properties of local residents. This necessitated the design and construction of gabion stormwater attenuating structures to curb existing erosion in these areas and to control future erosion.

Mazcon Civil and Building Contractors were awarded the contract worth R17,049,388, and construction commenced on 28 June 2010. Mazcon is a black-owned construction company based in Vryheid. The company, which was established in 2001, has a 7CEPE CIDB rating, and is a level 6 BEE contributor.

COMMUNITY INVOLVEMENT
As part of the community upliftment programme, funds were allocated for training within KwaMsane. The Cement and Concrete Institute (C&CI) were approached by Goba to conduct an engineering training course for forty local labourers on the batching of concrete and the construction of a CRC pavement. The training course involved a six-hour lecture on concrete theory and its applications, and a two-day practical workshop on the construction of a CRC pavement. The trained locals were subsequently hired by the main contractor for the full duration of the project.

To increase the delegates’ skills, Goba and Mazcon facilitated training on steel fixing, formwork erection and concrete batching within the site camp, followed by a mandatory trial run. Delegates were taught the correct methods of steel fixing and placement of reinforcing for the pavement, as specified by the drawings, the correct methods of formwork erection to ensure that correct levels were achieved, and correct batching methods to ensure that the concrete met strength and consistency requirements throughout the project.

In addition to the engineering training, thirty local community members were trained by Tholowethu Trading Enterprise in home-based care as part of a generic training initiative. Delegates were taught various methods of communication, community empowerment, community mobilisation and basic nursing care with specific reference to rural, elderly and HIV-positive people.

As part of the entrepreneurial training, Goba recommended that Mazcon be assisted in attaining a recognised quality management system. Wynleigh International (Pty) Limited were contracted to assist Mazcon in compiling an in-house quality assurance plan.

Furthermore, two students received in-service training under the supervision of Goba and Mazcon during the construction phase. A total of nearly R400,000 was spent on training as part of this contract.

As part of the project SANRAL had allocated funds for the construction of a community facility. Four such projects were identified within the KwaMsane community, namely the installation of refuse bins, the installation of three bus shelters, the re-grading of an existing access road to allow correct drainage, and planting fruit trees within the community.

The first project was to procure and install eight refuse bins around the KwaMsane community to combat litter...
pollution. This project was undertaken with the assistance of the Mtubatuba Municipality to ensure that the refuse would be removed and correctly disposed of. The second project was to design and construct three bus shelters for the bus lay-bys along the new roadway. Two bus lay-bys and shelters were constructed at identified locations along the western collector and one was constructed along the eastern collector. Goba, together with the Mtubatuba Municipality and local taxi association, coordinated the placement of the lay-bys and shelters to ensure their correct usage.

The third project involved the re-grade of an internal access road within the community. The existing road did have sufficient drainage, but due to poor town planning, stormwater outlets at critical locations had been blocked by residents, as the runoff was damaging their properties. Various alternate drainage options were considered, with the final decision being to re-grade the existing road and construct proper drainage along the road.

The fourth project, still under way, involves the planting of fruit trees in the properties of local residents. Various local fruit-bearing trees are placed in selected areas to both enhance the general appearance of KwaMsane and provide an alternative food source for local inhabitants.

On completion, the expenditure for these community projects will amount to R780 000.
CONCLUSION
This R17 million project is in the final stages of completion, with less than 5% of the outstanding works requiring completion. The construction of the KwaMsane access roads and pedestrian facilities has benefited the KwaMsane community immensely through utilising labour-intensive construction techniques and providing much-needed training for local residents. The project is an excellent example of how cooperation between all the parties involved leads to the successful completion of a project – in this case between the client (SANRAL), the engineer (Goba), the contractor (Mazcon), the Mtubatuba Municipality, amaKhosi, local residents and local labour.

In addition to this, the entire funding allocated to training and community facilities was expended during the project through effective interaction with the various parties and buy-in from the local amaKhosi. To date a total of nearly R5.3 million has been spent within the Umkhanyakude district, of which R2.1 million went towards local labour, and a further R1.4 million was spent within the local community.

Although the project ran over the allocated construction period, the major goal of maximising community participation was achieved, resulting in a high-quality product that was completed within the allocated budget.