

Innovative new precast concrete wins Community-based Award

The R32,5 million Ugu District Municipality Rural Household Sanitation Project – Programmes 4, 5 and 6 was implemented between March 2004 and March 2006.

The purpose of this project, in keeping with the National Sanitation Policy, was to provide a socially acceptable basic level of sanitation to rural communities within the Ugu District Municipality which was economically feasible, sustainable, environmentally friendly and which assists in improving the current and long-term health status of the community with the provision

of ventilated improved pit (VIP) toilets, linked to health and hygiene education programmes for the beneficiaries.

In addition, implementation solutions targeting maximum utilisation of local labour and materials were aimed at creating employment opportunities and providing skills development during construction.

The main objective of the project was to create a 'sanitation need' within the beneficiary communities so that rural households would ensure the use of an acceptable VIP toilet, rather

than the bush and/or 'long drops'.

Long-term sustainability was promoted by ensuring the training and use of local labour in the construction of the VIP toilets so that skills would be retained within the community for the construction of new toilets and for the removal and re-erection of toilets when pits filled up.

Toilet superstructures have been designed to be removed and reinstalled in segments, over new pits, when the need arises.

The project was implemented between March 2004 and March 2006. In total 10 418 household units benefiting some 70 000 people were built, providing more than 2 400 jobs.

An integrated approach with active involvement of all stakeholders was adopted. Social consultants were responsible for identification and notification of beneficiaries, based on liaison with local amakhosi, isinduna and councillors. They were also responsible for awareness creation, training and capacity-building on safe sanitation practices, health and hygiene and waterborne diseases and training on operation and maintenance procedures for VIP toilets.

Following an announcement by Department of Water Affairs and Forestry that steel toilets were no longer to be offered as an option for VIP toilet installations, an innovative new precast concrete toilet superstructure was developed.

The new structure utilised precast concrete culvert like 'c-sections' for the walls that are durable, maintenance free and sturdy, but at the same time modular. This allowed for transportation of components over difficult terrain, utilising of local people during construction with associated skills development, and from an operational perspective easy removal and re-assembly of the superstructure over a new pit when the pits are eventually full.

Sensitive and holistic handling of environmental issues by way of geotechnical and geohydrological investigations by specialist consultants preceded construction.

Pits for VIP toilets were sited by the project team comprising the engineer's staff, the social consultant and the environmental health officer in consultation with the homeowner. Thereafter the pit was dug by the beneficiary and inspected by the engineer's representative in accordance with dimensions specified.

If necessary, pits were lined if necessary with a ferrocement lining. Local people were



UGU DISTRICT MUNICIPALITY RURAL HOUSEHOLD SANITATION PROJECT – PROGRAMMES 4, 5 AND 6

Winner of the SAICE National Award for Community-based Projects in 2006

Submitted by Durban Branch

KEY PLAYERS

Client Ugu District Municipality, Water and Sanitation Department

Consulting engineers Stemele Bosch Africa (Pty) Ltd (Multidisciplinary Consulting Services)

Numerous contractors, suppliers and ISD consultants

toilet

▶ *Opposite page: Construction of ferrocement lining*
Right: Precast concrete VIP toilet – side elevation

again trained to line pits. Pit linings include apertures for seepage of water and a 'ring beam' at ground level.

Precast concrete slabs and wall sections were stored at central depots, and then transported through often steep and difficult terrain to individual household sites using local labour.

The area over the pit was levelled and the cover slab positioned to receive the superstructure comprising four culvert-like precast concrete 'c-sections'. The galvanised steel roof sheet, PVC vent pipe with flyscreen fitted to the cover slab and a wooden door and frame completed the toilet, which was then handed over to the beneficiary.

Ugu's targeted procurement policy was adopted in respect of all procurement. Local emerging businesses were engaged and eight suppliers, nineteen construction managers and seven ISD consultants were appointed for implementation of the programmes.

The total project value amounted to R32 568 220 and it was funded through the MIG programme.

Approximately 70 000 people from the community are clearly the beneficiaries of this project which has maximised local inputs as well as addressing job and skills creation and ultimately improving the quality of life. In order to achieve this, the project was broken down into smaller components which required a higher level of competence in terms of the overall project management and co-ordination to ensure completing projects on time and within budget.

The quality of the project, both from a technical and project management consideration, was controlled throughout by the application of Stemele Bosch Africa's ISO 9001/2000 certified quality management system.

The project has been successful in delivering a long-term sanitation solution to many rural families within Ugu District Municipality but, more importantly, it has provided people with dignity. □



Source:

http://www.saice.org.za/downloads/monthly_publications/2007/CivilEngFeb07web/#/0