



**MULTI-CELL™
NGCINGCINIKHWE
CONCRETE ACCESS
ROAD, EASTERN CAPE**

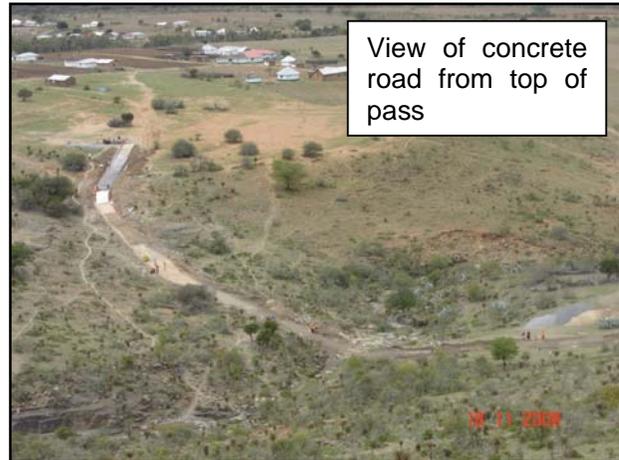


**Province of the
EASTERN CAPE**
Department of Roads & Transport

Case Study

Project:	Community- based “inaccessible roads” transport programme, Ngcingcinikhwe village situated on the Great Kei River near eVotini..	Date:	November 2008
Client:	Eastern Cape Department of Roads and Transport	Product:	MULTI-CELL™
Consultant:	Ingwenya Engineers	Quantity:	3 450m ²
Contractor:	Community		

In 2007, The Department identified the requirement for all weather vehicular access to Ngcingcinikhwe village under the inaccessible roads programme. Previously the only access for the community was a badly eroded track, too steep for vehicles. Sick or injured persons had to be carried more than a kilometre uphill to the nearest road. Food and supplies had to be carted in by donkey or wheelbarrow from eVotini. Tractors were not able to access the fertile soils in the river valley and produce or water was difficult to transport out.



View of concrete road from top of pass

A 3.0 m wide MULTI-CELL™ concrete road with gradients up to 16% was constructed down a very steep, 45 degree rocky hill. Labour Intensive construction methods were employed providing training and local work opportunities for 109 local unemployed people. The Concrete-filled MULTI-CELL™ geocell system was selected because of the suitability to labour intensive construction methods, durability and low maintenance requirement. The continuous flexible interlocking concrete block system has the ability to deform with differential settlements, thus permitting the use of substandard base materials. The continuous flexible interlocking concrete block system eliminates the requirement for joints and therefore any future joint maintenance. Concrete placed into 200mm by 200mm MULTI-CELL™ pockets provide a flexible concrete system with tight, low permeability unique shape joints that have a high cell wall interlock and prevent washout of fine particles in the underlying base material. MULTI-CELL™ wall height dictates final concrete thickness, making it ideal for the construction of non-linear structures, as concrete thicknesses are assured.



Original track



New Multi-Cell concrete road



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Base preparation, Multi-Cell panels tensioned to side forms, concrete placement and screeding

