

Site report

World Cup improves the infrastructure at the Cape

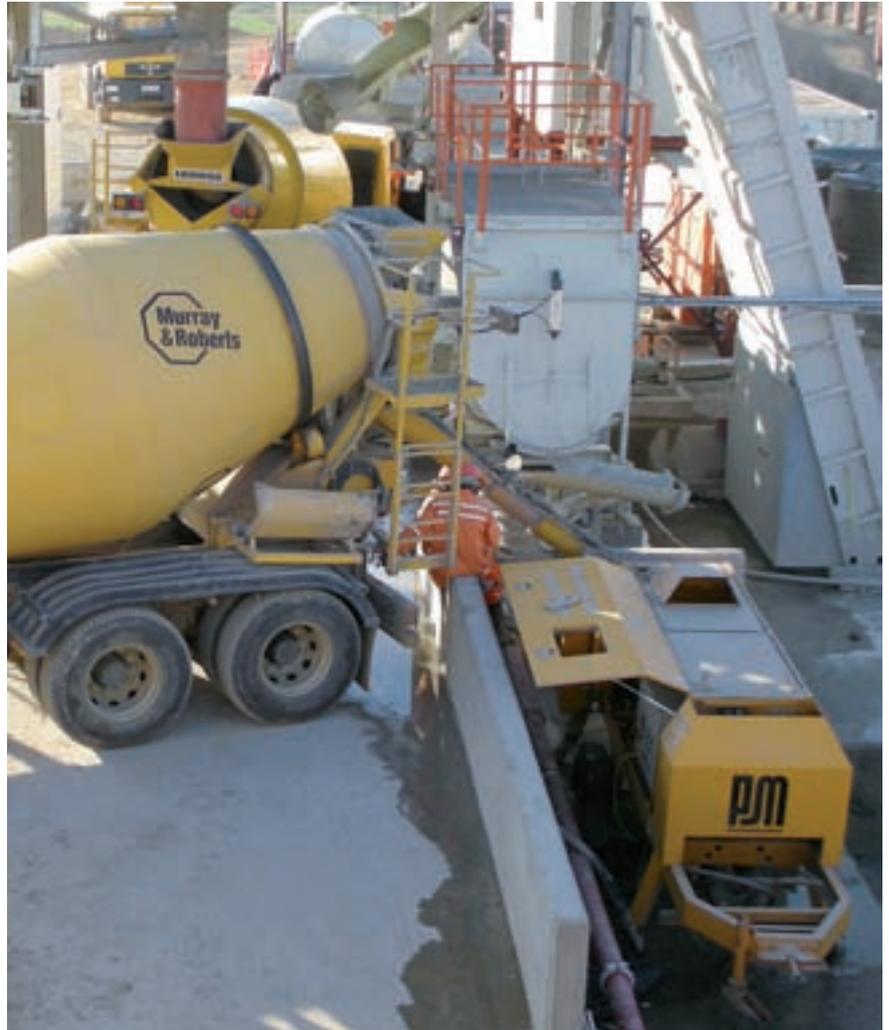
Putzmeister

In South Africa the 2010 football World Cup has had a considerable impact on the expansion of the rail network. Alongside other projects, priority is being given to the fast completion of the Gautrain, an 80 km rapid train link. Two Putzmeister concrete pumps and a stationary boom are used in the production of numerous major prefabricated concrete elements.

On completion, the Gautrain will connect Johannesburg via Sandton to Pretoria and the Oliver Tambo International Airport. The trains will travel on the new track at speeds of up to 160 km/h. A total of ten stations are planned on the line, but the route is currently still under construction. The cost is estimated at around 25 billion Rand (approx. EURO 2.54 billion or £ 1.75 billion). The name of the project is derived from the Gauteng Province through which the new line runs.

The numerous piers and sections for the superstructure, and for the parapets of the viaducts and bridges, are of prefabricated concrete parts. The components are produced in the extensive Gautrain prefabrication works, the largest prefabricated concrete factory in South Africa. A mixer with a capacity of 120 m³/h is used to supply the two BSA 1409 D units with concrete (C 45/55). A total of around 750,000 m³ of concrete will be used in the construction of the new rapid train link.

The "M"-shaped sections needed for the superstructure of the Gautrain line are prestressed and vary in length (on average, 1.5 m), depending on the bridge spans. Several viaducts are also planned for the Gautrain route, the largest with a



Charging one of the BSA stationary pumps

span of 650 m. The concrete sections for the viaducts are 10.1 m wide and 2.5 m in length. Each one weighs up to 55 tons. The components are produced using special moulds. The individual concrete batches are spread by a stationary Putzmeister MX 24 stationary boom. After hardening, the sections are transported by low loaders to the various construction sections.

Constructing the viaducts and bridges from prefabricated components has the



The concrete pump operator directs the truck-mixer into position

advantage that no formwork is needed at the bridge construction sites themselves, which means considerable time savings during the construction of the actual railway.

As soon as the last prefabricated concrete parts have been poured, the factory will be dismantled; it is planned that a bus depot will be built on the site. The bus lines radiating from the depot will cover a radius of around 15 km and undertake the majority of the passenger transport. Commercial commuters will particularly benefit from this.

The Gautrain project is being constructed by the Bombela Consortium, made up of four companies, each with a share of 25 %. The French group, Bouygues Travaux Publics is responsible for the tunnels, and the Canadian company, Bombardier, is supplying the locomotives and wagons. The South African building group, Murray & Roberts and the Strategic Partners Group (Black Economic Empowerment) are also involved.



The Putzmeister MX 24 stationary boom on rails spreads the concrete in the moulds of the prefabricated elements



The stationary boom is operated by remote control (Photos: L. Geysler, PMSA)



Two workers help to convey an impression of the structural scale of the prefabricated concrete parts

The Putzmeister Group

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