

# FAIRBROTHER

GEOTECHNICAL  
ENGINEERING

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CORPORATE BROCHURE



# Proactivity in piling

It's vital to build on solid foundations; and underneath an increasing number of bridges and buildings in South Africa is piling work undertaken by Fairbrother Geotechnical Engineering. Ruari McCallion finds out more from Adrian Meerburg

**F**inding out where some good ideas originate can be surprising. Fairbrother Geotechnical Engineering was established because the company founder, mechanical engineer James Fairbrother, got fed up of waiting for a company to install a borehole in his back yard. He designed a drilling rig using part of a forklift and a gasoline motor and drilled his own borehole. His neighbours saw what he'd done and asked him to do the same for them. Pretty soon, he had enough work to give up his day job and found himself drilling irrigation wells in the agricultural operations of Cape Flats. The nature of the area—sandy soil—led to the acquisition of expertise in geology, so the logical development was to expand into geotechnical core drilling services.

The geotechnical core drilling services later expanded into lateral support, pipe jacking, dam grouting and piling. Fairbrother Geotechnical Engineering now provides a full range of geotechnical services which include both design and construct solutions.



“Geotechnical contracting involves subsurface investigation and construction,” says Adrian Meerburg, operations director, who is a partner in what remains a privately-owned, family company. “When you’re constructing a building, a bridge or anything, large or not so big, you have to understand the soil conditions. You have to do tests and check the suitability of the ground to support the structure and provide a suitable economic solution to your client. For example, a bridge will almost inevitably be built where poor foundation conditions exist on the surface. Placing suitable foundations below the water table is often impossible without creating a large impact on the surrounding environment. The solution would be to drive concrete piles down to suitable founding conditions and then build the bridge footings on the piles.”

Fairbrother has left small well drilling behind, which may be seen as a shame by some but it is a benefit to, for example, the core drilling investigation for the newly built Cape Town sports stadium constructed for the FIFA World Cup, as the site was drilled by Fairbrother. The build-up to the 2010 World Cup in South Africa involved a lot of infrastructure work and Fairbrother won a significant share of the geotechnical work in the southern part of the country.

“There has been upgrading of interchanges on the highways and of the public transport system,” says Meerburg. “Public transport isn’t particularly popular among the middle class in South Africa as it is thought to be unreliable and unsafe and most of the poorer people use minibuses—so the World Cup has provided an opportunity for government to improve our public transport system and encourage more people to use it. The 2010 FIFA World Cup will leave a legacy of improved public transport with the development of a rapid transit system that runs from middle class areas to the town centres—the idea is to encourage people to leave their cars at home.” Whatever the reasoning and whatever the project, Fairbrother has had a big part to play in upgrading the Cape Town area’s infrastructure.

Redevelopment of city centre areas presents particular challenges—which Meerburg clearly relishes. “Building the underground levels of a commercial building requires excavation of 10 to 12 metres, hard up against the street,” he says. “The excavation would collapse without the application of lateral support



solutions. We provide design and construct solutions for deep basement excavations.”

New developments require new services such as optic fibre cables, sewer lines and water lines. These services cross existing roads, rivers and rail lines and must do so without disrupting the city and its services. Fairbrother offers trenchless solutions such as thrust boring and pipe-jacking ranging in sleeve sizes from 300mm diameter and extending up to 3,500mm diameter. “Thrust boring,” he says, “involves pushing a metal sleeve up to 650mm in diameter below the roads, rivers and rail lines. Pipe jacking covers concrete pipes ranging in size from 900mm to 3,500mm diameter—the sort of things that carry water, sewage and electrical services.”

Fairbrother has two self erecting work platforms (SEWPs) that have been designed and built in-

house. These SEWPs have been used for marine geotechnical investigations for the construction of the new deep water Port of Coega near Port Elizabeth, the deepening of the Port in Cape Town, the deepening of the Port of Saldanha (deep water port north of Cape Town), the Port of Luderitz in Namibia, the new quay wall in Luanda, Angola and for the new Chevron Texaco LNG plant in Soyo in Angola. Fairbrother is currently busy with further work at Coega, Port Elizabeth for the new PetroSA refinery which is to be sited next to the newly built Port of Coega.

The company is owned by two of James Fairbrother’s sons, Ian and Peter, and Adrian Meerburg. Ian tenders on work and is responsible for design and construction of the plant, Peter manages the finances and Adrian is in charge of operations management. The company also designs and constructs certain equipment instead of purchasing very expensive, electronic European equipment which is often not suited to local conditions.

Fairbrother is relatively small compared to some other civil engineering companies—it has around 100 employees—and it differentiates itself by its adaptability, flexibility, depth of expertise and its service excellence.

“We have been in business for 35 years and have a very stable and skilled employee base. Some of our people have been here 30 years,” Meerburg says. “They have mostly learned from the bottom-up. Our on-site teams typically consist of a very skilled foreman, skilled technician, experienced and skilled operators and skilled and unskilled labours. We have a comfortable organogram, from skilled to unskilled. We source managerial staff from colleges and universities; operators and foremen are trained here, from the grass roots. They learn to operate rigs, earn promotion and proceed that way. It’s a mentorship scheme, which has served us pretty well.”

The whole structure also seems to serve South Africa well. The three directors meet pretty much every day; they know all their staff by name and exactly what is going on, across all their sites. So if you happen to see a piece of equipment on a civil engineering site that maybe looks unfamiliar but seems, somehow, to be just right for the job, you can be pretty sure that’s Fairbrother Geotechnical Services, bringing its experience, knowledge and innovation to bear. [www.fairbrother.co.za](http://www.fairbrother.co.za) ●

