

# Shortage of skills a threat to major projects

## Despite the economic slowdown, premiums for specific skills may continue to increase

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There is plenty of anecdotal evidence around that tells us there is a massive shortage of technical skills in the country and that, as a result, the construction and infrastructure provision projects needed to make the country's hosting of the big international football tournaments of 2009 and 2010 are in jeopardy.

While the perception exists, there is not much objective, verifiable data to support it and this is what motivated the Landelahni group to undertake its Infrastructure Sector Survey 2008, the results of which were released last week.

According to Sandra Burmeister, chief executive of Landelahni, the idea was to create a central pool of data and to use this to uncover trends and plot the way ahead.

"We have been running similar surveys in mining and infrastructure since 2004 and their purpose has been to collate data from a range of sources that would paint an accurate picture of the skills situation in the sectors," she says.

"We realise a creative and comprehensive approach is needed by the sector if it is to deliver on local projects against the backdrop of the global skills shortage."

The survey looked at 82 companies with just over 214 268 employees, representing 40% of permanent employment in the infrastructure sector: the electricity, water, waste, road, rail, and ports sectors, as well as consulting engineers, major construction companies able to deliver projects of over R30-million, large JSE-listed construction companies and large

suppliers to the construction industry, such as cement producers.

According to Burmeister, there is both good and bad news in the results.

The good is that investment in skills development is growing all the time; the bad is that there is plenty that needs to be done.

"The number of civil engineers graduating from South African universities has soared in recent years, and in-company training in the infrastructure sector has also accelerated.

"But much more needs to be done if the skills shortage is not to jeopardise crucial infrastructure projects," she says.

South African infrastructure capital investment soared to an estimated R900-billion and employment in the sector increased from 634 000 in 2001 to 1,2-million in 2007, with some 44% employed on a permanent basis, the results show.

This growth has, however, revealed that there is a real shortage of people.

"Globally, research shows that skills shortages are the biggest constraint on construction growth, with project and contract managers, tradesmen and engineers cited as the scarcest of all skills," says Burmeister.

"South Africa is well known for its engineering skills, and the infrastructure sector is competing for skills in the global resourcing market."

The survey results also show that there have been encouraging movements within the sector as far as transformation is concerned.

The number of black people in top management in the infrastructure sector has increased significantly over the

past two years, from 16,2% in 2005 to 28,8% in 2007. Black senior management increased from 12% to 32,4% and black professionals from 20,6% to 41,3%.

"The significant increase in black representation in these core functions, now at an average of 35%, is encouraging," says Burmeister.

As far as gender is concerned, the picture is not as rosy, but Burmeister points out, infrastructure by its nature is a male-oriented sector with a large proportion of its operations teams being based on remote sites.

"Nonetheless, the number of women in top management in the infrastructure sector has increased significantly over the past two years, from 4,3% in 2005 to 12,9% in 2007.

### Increase in female professionals

"Female senior management increased from 6,4% in 2005 to 19,5% in 2007 and female professionals from 10,1% to 22%.

"Numbers of female employees in core roles have increased significantly from 5% to 15% over this period.

"This has been influenced by gender equity programmes in parastatal power, water, road and rail utilities," says Burmeister.

"Although redressing gender imbalances in the sector lags significantly behind the all-industry average, this needs to be seen in context."

The improvements are mainly in the middle to senior management levels, not in the lower-skilled support role where, by the nature of the work that needs to be done, the workers are still mainly male.

Burmeister points out that in the infrastructure sector, as in

others, rapid changes in technology quickly make existing skills obsolete and this contributes to the high unemployment/high skills shortage paradox.

The answer, she believes, lies in a project-based approach.

"Short-term projects with clearly defined deliverables are more attractive to the new generation of skilled workers.

They are not committed to a long-term relationship and the learning curve on such a project is steep – just what they want out of a job.

"This approach also allows critical scarce skills to be shared among projects with, for example, one structural geologist doing preliminary survey work on several sites at the same time."

Other results from the survey: Skills development: professionals and graduates: In South Africa, between 1998 and 2006, a total of 35 511 engineers graduated across all disciplines.

There is a total of 14 234 professional engineers registered across all disciplines in SA – 1 100 fewer than there were 10 years ago.

Skills development: artisans – South Africa is experiencing a severe shortage of well-qualified, competent and experienced artisans.

The Joint Initiative for Priority Skills Acquisition suggests that at least 12 500 artisans should be produced each year over the next four years to meet demand, making a total of 50 000 over four years.

The average cost of artisan training is R120 000 over three years. At a 42% pass rate, 120 000 candidates need to be trained over three years to generate the required 50 000 qualified artisans. The cost of training 120 000

artisans at R120 000 each comes to a total of R14,4-billion.

This must be seen against the current 1% training levy which generates a mere R6-billion a year.

Training – the infrastructure sector has increased training spend significantly and is well above the all-industry average at all levels.

The skills challenge in the sector is exacerbated by significant numbers of small and medium contractors that have little capacity to train and develop staff.

Lack of delivery at the Construction Education and Training Authority has compounded the problem.

Remuneration – remuneration packages have tripled and quadrupled over the past two years. Contractors who are paid for expertise on a project-by-project basis are earning as much as 40% to 140% more than their permanently employed counterparts.

Scarce skills incentives, shares, long-term incentives, performance bonuses and retention incentives may well continue to be the norm in the infrastructure sector.

Despite the economic slowdown, skills premiums for specific core business activities may continue to rise.

Career management – traditionally the infrastructure sector has been conservative with slow career acceleration.

However, there has been a shift in traditional upward career progression and a move to shorter tenure in key roles as well as a significant increase in contractors.

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