

## RESULTS OF INFRASTRUCTURE SECTOR SURVEY

THE NUMBER OF CIVIL engineers graduating from South African universities has increased 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.

These are the findings of the Infrastructure Sector Survey 2008, carried out by executive search firm, Landelahni Business Leaders. According to CEO Sandra Burmeister, 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. "South Africa is well known for its engineering skills, and the infrastructure sector is competing for skills in the global resourcing market."

As the South African infrastructure capital investment soared to an estimated R900 billion, employment in the sector has

increased from 634 000 in 2001 to 1,2 million in 2007, with some 44% employed on a permanent basis. In 2006 the sector experienced 15,1% growth and in 2007 topped that at 21,3%. Employment in the infrastructure sector has doubled from 4% to 8% of total employment.

The Survey researched 82 companies with just over 214 268 employees, representing 40% of permanent employment in the infrastructure sector, as well as consulting engineers, major construction companies able to deliver projects of over R30 m, large JSE-listed construction companies, and large suppliers to the construction industry, such as cement producers.

#### **Employment equity and gender**

The number of blacks in top management in the infrastructure sector has increased from 16,2% in 2005 to 28,8% in 2007. Blacks in senior management increased from 12% to 32,4% and black professionals from 20,6% to 41,3%.

The number of women in top management in the infrastructure sector has increased over the past two years, from 4,3% in 2005 to 12,9% in 2007. Female senior management increased from 6,4% in 2005 to 19,5% in 2007, and female professionals from 10,1% to 22%.

Throughout the sector, these positive trends have no doubt been brought about by black economic empowerment legislation and tender criteria for government spend on infrastructure.

#### **Skills development: Professionals and graduates**

In South Africa, between 1998 and 2006, a total of 35 511 engineers (*including technicians and technologists – Ed.*) 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 ten years ago.

Civil engineering graduates have increased from 507 in 2003 to 1 199 in 2006, with the proportion of blacks remaining fairly constant at around 70% to 75%, and women remaining an increasing but small minority. "Efforts by the infrastructure sector to attract students are clearly paying off," says Burmeister.

#### **Skills development: Artisans**

South Africa is experiencing a severe shortage of well-qualified, competent and experienced artisans. The Joint Initiative for Priority Skills Acquisition (Jipsa) suggests that at least 12 500 artisans should be produced each year over the next four years to meet

demand, i.e. a total of 50 000 over four years.

The number of artisans tested across all trades increased from 15 000 in 1970 to 26 500 in 1986, while those who passed trade tests increased from 6 000 to 13 500. From 1986, however, the numbers tested dropped to 9 041, and those who passed dropped to a low 3 222, or 42%.

"This has far-reaching cost implications," says Burmeister. "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."

#### **Skills development**

According to Burmeister the skills challenge will continue for at least the next 10 years. The demand for skills in the infrastructure sector therefore calls for a more innovative approach when recruiting.

Employers can benefit from the transferability of skills; it is less costly to induct into the sector than to train from scratch. The return of retired and offshore contractors or foreign nationals to run infrastructure projects or act as coaches and mentors to up-and-coming young recruits should be pursued, although this is a short-term solution for the development of critical projects. "We need to guard against short-term delivery at the expense of long-term skills development."

#### **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.

"The only way to drive down the remuneration spiral is to invest now in the development of graduates and young and mid-tier professionals so as to help balance supply and demand in the longer term. To achieve this, executive incentives should be geared to increasing skills across the business, not just to advancing the bottom line,"

says Burmeister.

#### **Career management**

Key staff and executive committees are younger than before, and their growth pace needs to be consistent. Accelerated development programmes are needed at every level of the organisation, with international exposure and skills exchanges.

The infrastructure and construction sectors are ideally positioned to accelerate skills development on projects across the globe. International exposure and skills exchanges should be part of a broader exposure and retention strategy for managers and skilled professionals such as engineers and artisans.

"Given the spread of infrastructure investment, global resourcing strategies are crucial to the future of infrastructural development, allowing companies to share scarce resources across a multitude of projects."

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