



Azambi HPP

Knight Piésold

WELL POSITIONED TO SOAR IN 2019

On the back of an “exceptionally good year” in 2018, 97-year old proudly South African engineering and environmental consulting firm **Knight Piésold (SA)** is looking to build further on its strong achievements in 2019. Thanks to its fully transformed, Level 1 BBEE, 57% black ownership structure status and growing office footprint in Africa, the company is well positioned to service the entire African continent – using its award-winning technical experts to deliver industry revolutionising solutions for the mining sector, technical director for mining **ANDREW COPELAND** tells **LAURA CORNISH**.

2018 saw Knight Piésold truly excel across the industries it serves with a number of accolades added to its growing list of achievements.

The company won 14 awards from industry associations including Consulting Engineers South Africa (CESA), the South African Institution of Civil

Engineering (SAICE) and the Institute of Municipal Engineers (IMESA). This is the highest number of awards won by a firm this year and is recognition of the company’s excellence in engineering, business and mentorship – “proving that it is possible for a world-class South African-owned consulting engineering firm to thrive in the global arena, while operating in harmony with the transformation goals of its home country,” says MD Vishal Haripersad.

“This demonstrates not only that we are delivering high quality projects and designs, but that we are being recognised accordingly. This is testament to our highly skilled internal experts and our ability to provide a platform to nurture their growth and build their careers in the industry,” Copeland adds.

On the back of this philosophy and ethos of cultivating and developing its workforce, Copeland believes Knight Piésold is well positioned to grow further in 2019 as more of the industry engages with the company to advise and work on more prestigious projects – particularly in the area of mine residue where many of the mid-tier and major mining houses are injecting additional focus to improve tailings facility safety and stability through

Knight Piésold was awarded the contract to design and oversee the construction of Vedanta Zinc International's tailings storage facility for Gamsberg



← **Knight Piésold** won 14 awards from industry associations in 2018

analyses and a greater understanding of associated risks.

"Growth does bring with it staff shortage challenges but we will expand our team where necessary and more importantly, train our existing team, including junior staff members to gain sufficient knowledge and learn our entire skills suite across the industries we serve."

In support of this, Knight Piésold has focused on developing the next generation of South African engineers through investments in mathematics and science at secondary schools throughout South Africa. In 2019, the company will make 10 bursaries available to first-year civil engineering students. The qualifying criteria are tough but fair, with deserving students required to achieve a minimum of 75% in pure mathematics and science.

Mining-related expertise

Within the mining sector, Knight Piésold may be largely recognised for its tailings and residue designs, but Copeland highlights the company's full skills sets which extend into all areas of mine infrastructure design and civil engineering, and explains the relevance this has bearing on for the mining sector as well.

"Our geotechnical expertise reaches across multiple industries from dam construction to power delivery, road works and haul roads. We offer a full infrastructure package which caters to a mine's requirements – a noteworthy service offering considering water management, road and power needs are essential to a fully operational mine."

Focusing on power requirements more specifically – a challenge for remote mining operations in Africa, Copeland notes Knight Piésold's water and

hydropower capabilities. "Run-of-River hydropower scheme projects offer significant potential in large parts of Africa and offers the opportunity to generate clean, cost competitive power by harnessing energy from natural water flow."

Because this is influenced by seasonal weather patterns, it represents an attractive solution for mines to reduce their consumption of expensive diesel-generated power through a hybrid diesel/renewable energy solution.

Having completed power optimisation studies on four proposed run of river hydropower schemes for the Kibali gold project in the Democratic Republic of Congo (DRC), Knight Piésold was appointed as owner's engineer and technical reviewers during construction of Ambarau HPP. Knight Piésold then went on to undertake the concept, detailed design and construction supervision of Kibali's third and latest run of river scheme, the 11 MW Azambi HPP, which was commissioned in August 2018. Copeland believes the track record to deliver such projects represents significant opportunities for mining projects in Africa – and more specifically Central and West Africa. It further benefits neighbouring communities who will continue to benefit from the power supply after mine closure.

"This is a solution we're going to focus heavily on promoting to the mining sector moving forward," Copeland notes.

Engineer of record for Tailings Facilities

It is only natural that a company with strong skills sets and experience is able to offer the mining industry services designed to minimise risk outside of its core production focus and Knight

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Piésold prides itself on fulfilling a role in this area – specifically with regard to tailings storage facilities (TSFs), and is today the Engineer of Record (EoR) for some of the biggest tailings facilities in Africa.

The term EoR is commonly used in North America to define a responsible person for the design and construction phases of a project. For TSFs, an EoR is often appointed as the person technically responsible for seeing that the facility is built according to the design. The use of this appointment has increased due to recent high profile TSF failures, and has spread to countries outside of North America, especially for mining companies that are based or listed there. Recent updates to national/international TSF guidelines suggest appointing an EoR is good practice, Copeland notes.

TSF's are built over many years, so the initial capital construction phase is often well supervised according to design drawings and technical specifications, but then enters a commissioning and operation phase, before reaching a closure phase. It is during these multiple year phases, where deviations from the design are possible, and often the operation is undertaken by the mine or a third party contractor who may not always appreciate the implications of poor operation/construction.

Since the EoR is not on site full time, how can he/she take on such an appointment and responsibility for anything that might go wrong? The only way this is possible is if the EoR is given greater authority.

"While appointing an EoR makes sense as a way of ensuring responsible tailings management from cradle to grave for each TSF, and is good practice, in a southern African context, it is a potentially daunting role, as this person becomes solely responsible for ensuring the TSF remains a sound and safe structure, through their own decision making process and where necessary engaging with the client to address potential problems," Copeland explains.

Knight Piésold's commitment to fulfil the role of EoR, which carries with it huge levels of accountability, highlights the company's confidence in its employees and their ability and confidence to carry TSF associated risks on behalf of its clients.

In conclusion

Knight Piésold continues to demonstrate its deliv-

↓ **Azambi Kibali's** latest HPP – constructed by local contractor IOB under the direction of Knight Piésold



ery of world-class engineering and environmental solutions across the industries it serves and is looking to play an even bigger role in the mining sector moving into 2019 on the back of a highly successful 2018 year.

"We are particularly proud of our transformational journey; we believe in the scorecard we have attained; we believe in empowering businesses and people; we have never believed in buying shortcuts to transformation within our organisation; we do not see it as a mere cost on

the balance sheet but as an imperative for the sustainable economic growth of the country. We have taken a measured approach to achieving real, sustainable transformation within our organisation and through a carefully managed journey, achieved Level 2 BBBEE in 2010 and now Level 1 in terms of the revised Construction Codes. We are proud to say that all our shareholders are not only full-time employees of the organisation, but real assets in our business," Haripersad concludes. **MRA**

Construction of the decant tower at Gamsberg



Trenching work for the tailings storage facility at Gamsberg underway

AFRICAN PRESENCE BRANCHES OUT

Although smaller in size than its foreign-owned competitors, Knight Piésold has significant global reach through its branch offices across the world which is expanding further in Africa. Beyond its existing offices in Namibia, Zambia, Botswana and Ghana, the company has opened an office in Lubumbashi, DRC and is now

in the process of establishing an office in Madagascar as well. "This is a strong link in our overall African offering, and even more so considering more and more countries are requiring a local presence and local capacity to execute work – this is undeniably building a competitive edge in the marketplace," Copeland states.