96 years of design execution

Leon Furstenburg, director, Knight Piésold

In the engineering field, Knight Piésold leads as a Proudly South African company, headquartered locally, and operating internationally.

By Alastair Currie

KNIGHT PIÉSOLD IS A multidisciplinary consulting firm that has a long history in water delivery projects across all the integrated engineering fields, and was one of Africa's foremost pioneers in hydroelectric power, which remains a core focus area to this day. Born in 1921, Knight Piésold is the oldest consulting engineering firm in South Africa, and probably Africa, and built its reputation in the mining sector, where the firm remains a design innovation leader, alongside its other multifaceted specialisations within the world of infrastructure.

Progressive expansion took place in Africa from the early 1920s and globally from the 1950s. "We remain one of the few totally independent, wholly owned South African engineering consulting firms operating worldwide. That's a significant achievement," says Leon Furstenburg, director, Knight Piésold, who has been an integral part of the firm's design and construction management team on some of the Southern African region's most strategic water projects.

These include the Katse Dam, Matsuko weir and tunnels, the Lesotho Highlands Water Project (LHWP) delivery tunnels and the Mohale Katse tunnel – all part of Phase I of the LHWP (Lesotho Highlands Water Project) and commissioned around 2004. Knight Piésold now forms part of the Metsi a Senqu-Khubelu Consultants joint venture appointed for the design and construction supervision of the Polihali diversion tunnels for Phase II of the LHWP. This JV contract commenced in September 2016 and will be completed in approximately 3.5 years. These diversion tunnels will facilitate construction of the new Polihali Dam, which is central to Phase II and scheduled for construction around 2020.

Hydropower

Water engineering is multifaceted. Chiefly, it's about water storage, treatment and supply. Since Knight Piésold's inception, however, another field of interest has been hydroelectric power, with the firm having completed more than 200 projects globally. The first was in Zambia in 1926.

"As part of a JV consulting team, we are now in the final commissioning stage on Eskom's Ingula Pumped Storage Scheme, which is the largest hydroelectric development of its kind to be rolled out so far in Africa," Furstenburg continues. Constructed at a project value of around R25 billion, the installation straddles the KwaZulu-Natal and Free State provincial boundaries near Ladysmith.

Alongside strategically aligned JV partnerships, Knight Piésold continues with its own independent projects in all areas. In the hydroelectric field, these include the completion of an 11 MW run-of-river installation in Azambi, DRC, for a mining client, which will replace an existing diesel generator station used for prime power requirements.

Katse Dam, which forms part of the Lesotho Highlands Water Project

Meanwhile, work is progressing on the Kulungwishi 247 MW hydroelectric project in Zambia. This is a public-private partnership venture. Knight Piésold conducted the pre-feasibility and bankable feasibility studies, and will be the owners' engineer once financial closure is achieved.

Elsewhere in Southern Africa, Knight Piésold is supporting a developer to achieve financial closure on an exciting new 12 MW hydroelectric scheme in Swaziland on the Lower Magaduza River, in joint venture with Gibb. Construction is expected to commence during 2017.

In Namibia, Knight Piésold is the lead designer for the Neckartal Dam, which will be the largest in the country and includes a hydroelectric component, harnessing the power of the Fish River. This roller-compacted concrete dam will have a wall height of some 80 m, and an approximately 857 million cubic metre reservoir. Construction is scheduled for completion in 2017. 3S