



Carl has been employed as a Mechanical/Project Engineer at Paterson & Cooke since March 2008. He is responsible for the design of a number of tailings pumping systems in Africa and feasibility studies for applications related to mining projects. Aside from his technical responsibilities, Carl is actively involved in the management of personnel and software systems in Paterson & Cooke's drawing office.

Prior to joining Paterson & Cooke, Carl held a position of Mechanical/Project Engineer, and later Deputy Team Leader, at Sutherland Associates from late 2005 to 2008. Sutherland Associates provides multi-disciplinary (mechanical, civil and structural) consulting engineering services to the building industry.

Qualifications

2004, BEng (Mech.)
University of Stellenbosch

Professional Status

Registered with ECSA as
Candidate Engineer

Associate Member of
South African Institute of
Mechanical Engineering

Specialization

Hydraulic and process
design of slurry pumping
systems

Mechanical design

Computer programming

Notable Projects

Rand Uranium, Cooke Uranium Project Definitive Feasibility Study South Africa (2009)

Carl played a leading role in a large multi-company team that conducted a feasibility study for a new uranium plant in the Randfontein area near Johannesburg. Carl was responsible for the design and cost estimation of pump and pipeline systems with a capital value of approximately R 250 million.

Gold Fields, Driefontein Gold Mine HTO Project Feasibility Study South Africa (2009)

Carl was a key member of the Paterson & Cooke team who worked on the HTO (Historical Tailings Operations) Project feasibility study and was responsible for the digital terrain modelling and routing of over 400 km of overland piping for the study.

RandGold Resources, Tongon Gold Project, Côte d'Ivoire (2009)

Carl was responsible for the front end design and optimisation of Tongon Gold Mine's 10 km tailings pipeline and pumping system.

Kenmare Resources, Moma Heavy Minerals, Mozambique (2008)

Carl spent three weeks on site at Moma Heavy Minerals acting as an independent witness / mediator in a dispute between the mining company and the contractor responsible for the design and construction of the plant. The task involved extensive performance testing of equipment and interpretation of the performance data.

Nevsun Resources, Bisha Gold, Copper and Zinc Project, Eritrea (2008)

Carl was responsible for the front end design of the tailings pumping system and pipeline. The system was complicated by the fact that it had to accommodate a number of different ore types at varying tonnages over the life of the mine. The project involved collaboration with SENET South Africa and Amec UK who were responsible for the design of the remainder of the plant and the tailings dam, respectively.

Rio Tinto, Northparkes Copper Mines, Australia (2008)

Carl conducted a feasibility study for a new 8 MPa paste tailings pumping system with PD pumps. Design detail sufficient for $\pm 15\%$ cost estimate. The project involved collaboration with Outotec Australia who were responsible for the design of the paste thickeners and for the cost estimation.

Exxaro Resources, Zincor Base Metals, South Africa (2008)

Carl was responsible for an optimisation study for an existing pumping system with multiple pumps in parallel. The study included modelling of the existing system in Wanda 3.60. Significant challenges were presented by the acidic nature and elevated temperatures of the hot spent electrolyte solution being pumped.