LONG INTERNATIONAL

JEREMY M. CONNELL, PR. ENG.

Mr. Connell is a Principal with Long International and has over 40 years of business, project management, operations, alliance, and claims management experience in all aspects of international and domestic capital projects and programs. He is a key member of the Long International project management, engineering, and construction analysis team that provides a variety of services including, but not limited to, claims preparation, schedule delay analysis, loss of productivity analysis, standard of care analysis, and arbitration/litigation support.

Mr. Connell's project management and control systems experience includes greenfield and brownfield project assignments ranging from multiple small programs and projects to large-scale projects worth over US$10 billion. He has managed all stages of project execution from conceptual, Pre-FEED, and FEED studies through the various stage-gate approval processes, early and detailed engineering, construction, commissioning, startup, and project handover phases. Mr. Connell is an accomplished leader who has often advised clients on whether to proceed with or defer projects based on economic, market, and political conditions. Mr. Connell's credentials are built on his diverse expertise, providing an international perspective, and impeccable professional training by top-tier management companies such as Fluor, Jacobs, Shell, Sasol, Anglo American Corporation, and Suncor. As part of Long International's project management, engineering, and construction analysis team, he performed a detailed analysis of change order, delay, and disruption issues on a major LNG project in Australia.

Mr. Connell's industry experience includes mining (copper, molybdenum, gold, diamonds, bauxite, iron ore, mineral sands, coal) metallurgical/materials handling, chemicals (nitrogen, ammonia, nitric/sulfuric acid, ammonium nitrate, urea, chlorine, caustic), gas and synfuels (LNG, coal-to-gas, oil sands), refining (vacuum breaking, de-asphalting, gasification, thermal cracking, hydrotreating, crude units, gas oil units, re-distillation, hot oil, hydrocracking, visbreaking, naphtha, sulfur recovery, amine and sour water units), food and beverage (brewing, conditioning, malting, corn wet milling, syrups refining), packaging (kegs, bottles, cans), utilities (power, water, air, steam, nitrogen, sewage), and infrastructure (road, rail, heavy civil, marine ship loading) projects.

Mr. Connell is also an expert on all aspects of project, engineering and construction management, estimating, planning, cost and schedule control, root cause analysis, piping and instrument diagrams (P&IDs), process flow diagrams (PFDs) development, single line diagrams (SLDs), control systems, 3D plant modeling, risk management, material supply chain (procurement) and contracts, health, safety, environmental, community, project audits, project financing and permitting, and business services. He also has extensive construction and commissioning experience as well as expertise in the management and resolution of punch list items associated with plant construction completion. His ability to take complex projects to full production has resulted in significantly increased revenue and operational productivity for various organizations. For example, he developed a Mining and Metals (M&M) Project Execution Team, which he grew from a few members to over 200 project professionals in three years. The M&M Project Execution Team was responsible for multiple new project opportunities in Sub-Saharan Africa. Moreover, Mr. Connell has been instrumental in re-establishing and turning around underperforming projects and programs. His focus is to apply his expertise and talents to projects where his integrity, discipline, strategic thinking, and results-oriented perspective can be fully utilized.

EDUCATION

B. Eng., Electrical Engineering, *cum laude*, University of Pretoria, South Africa, 1982

PROFESSIONAL REGISTRATIONS

Registered Professional Engineer, Engineering Council of South Africa (Reg. No. 20180446)

CERTIFICATIONS

OSHA Safety Training (40 hours), 2014
Compliance and Ethical Leadership, SAI Global (Fluor University), 2008–2017
Business Leadership, Jacobs College, 2007
Construction Management, Jacobs College, 2006
Controlling Construction Costs, CTL Associates, 2001
Project Managers Course, Jacobs College, 2000
Management Leadership, Jacobs College, 2000

PROJECT EXPERIENCE

Mr. Connell is an experienced, executive level Project Director with expertise in a wide range of industries including mining, metallurgical, materials handling, chemicals, synfuels, petrochemicals, refining, beverage, packaging, utilities, and infrastructure projects. In addition, he has extensive experience managing the design of control systems for refineries, petrochemicals, synfuels, and chemicals processes. Representative projects include the following:

Project Management and Construction Management Expert Witness

- Long International, Inc. – Lakewood, Colorado

  As a Principal with Long International, Mr. Connell provides a variety of services including, but not limited to, project and construction management claims support, schedule delay analysis, loss of productivity analysis, standard of care analysis, and arbitration/litigation support. He played a lead role providing analysis and expert witness services for the following litigated cases:

  - Project management, engineering, module fabrication, and construction issues that caused delay, loss of labor productivity, and cost overruns on a mega LNG project in Australia.
  - Testifying expert witness for project and construction management issues on a pea protein isolate production project in the USA.

Oil and Gas, Oil Refinery, Synthetic Fuels, Petrochemical and Chemical Plant Facilities

- Apache Nitrogen Products Project Geronimo – Benson, Arizona

  On behalf of the client, managed a more than US$1.5 billion greenfield expansion of the existing nitrogen process plant in Arizona and reported directly to Apache's President and Board of Directors. Responsible for overall project delivery on behalf of the owner from pre-feasibility/FEED through to commissioning of the new facility. Also oversaw all aspects of project financing, permitting, stakeholder engagement, management of licensors, FEED/EPC contractors and consultants, and all related aspects of the project. The new plant included a 1,340 MTPD ammonia, nitric acid, ammonium nitrate solution, urea, urea ammonium nitrate, ammonium nitrate prill, DEF process plants, utilities, and infrastructure to produce various ammonium nitrate-based products for the industrial and agricultural industries.

- Synenco Energy Northern Lights Project – Calgary and Edmonton, Canada

  As Project Director, oversaw the US$8 billion Northern Lights Partnership Upgrader Project Design Basis Memorandum (DBM) Phase. Responsible for the overall upgrader project team on this greenfield

mega oil sands project located north of Edmonton, Canada. Process units included vacuum, solvent deasphalting, gasification, hydrocracking, and a sulfur complex. The project team also subcontracted with and trained a team from Sinopec Engineering Inc. located in Beijing, China.

- Suncor Energy Voyageur Upgrader Project – Calgary and Ft. McMurray, Canada

  As Project Director, managed the hydrotreater and sulfur units for Suncor's US$6 billion Voyageur Oil Sands Upgrader Project located in Ft. McMurray, Alberta. The DBM phase completed for Suncor included conceptual engineering and +30%/-0% estimate for the naphtha, distillate, and gas oil hydrotreaters, sulfur recovery, amine, and sour water units. Project tasks included all the control systems and associated control rooms. Responsible for the EPC contractor project scope of ~US$1.7 billion and worked as one of Suncor's suppliers of choice with other key engineering contractors and licensors. Work was completed in Calgary over a 12-month period.

- Polifin Midland Factory Chlorine Expansion Project – Sasolburg, South Africa

  As Project Engineering Manager, responsible for a US$11 million EPCM revamp project on the existing chlorine plant in the Midland Chemical Factory. Facilities included the addition of various new units (*i.e.*, brine filtration, ion exchange, caustic evaporation, chlorine drying and cooling towers), controls systems and extensive tie-ins on the existing plant and interfaces to other process units and utilities.

- Engen Refinery Expansion Phase II Project – Durban, South Africa

  As Lead Control Systems Engineer, oversaw the controls systems design for this US$100 million EPCM project that involved new and revamped refinery units, including visbreaker, thermal cracker, and kerosene hydrotreater units. Additional responsibilities included project planning, estimating, scheduling, cost control, detailed engineering of all control systems aspects including the control rooms, client and vendor coordination, and project task force management.

- Shell Tabangao Refinery Assets Renewal Project – Irvine, California and Tabangao, Philippines

  As Area Lead Control Systems Engineer, responsible for the generation of the conceptual control systems engineering/design and estimate for this US$500 million project. Refinery process units included a crude unit, thermal gas oil unit, redistillation units, and hot oil system, and the associated control systems.

- Port Dickson Refinery Conversion Project – Irvine, California and Port Dickson, Malaysia

  As Area Lead Engineer, managed conceptual and detailed control systems engineering and design for project plant units, including hydrocracker, hydrocracker fractionation, hot oil, and utilities. This project required a study of oil movement and a blending control system via Honeywell TDC 3000 and specialized software developed by Shell/Honeywell.

- Mossgas Onshore Refinery Catalyst Preparation Plant – Mossel Bay, South Africa

  As Lead Engineer, responsible for conceptual control systems, and detailed engineering and design for the controls systems for this metallurgical and materials handling plant. Responsibilities included development of control strategies, DCS and PLC hardware/software definition, detailed configuration and control logics, shutdown systems, fire and safety systems, control and instrument rooms, field instrumentation, and management of various major mechanical packages.

- Natref Refinery Instrumentation Revamp Project – Sasolburg, South Africa

  As Area Lead Engineer, managed Phases III and IV of the overall re-instrumentation project. Completed project site surveys and cost estimates for the conceptual engineering phase.

- Completed various project engineering, design, and plant support activities for the African Explosives and Chemicals Industries Consulting Engineering Department and for the Modderfontein No. 4 Ammonia Plant and Midland Chemicals Facilities in South Africa. At the time, the No. 4 Ammonia Plant

was considered to be one of the largest ammonia production facilities in the world supporting the production of explosives and fertilizers in Southern Africa.

Mining, Metals, and Materials Handling Facilities

- Compagnie des Bauxite de Guinée (CBG) Expansion Project – Kamsar, Guinea, West Africa

  As Senior Project Director, managed the 13.5 to 18.5 Mtpa expansion phase of the existing bauxite mine and CBG's production facility in Kamsar, Guinea. This US$650 million brownfield expansion project included the addition and upgrading of CBG's infrastructure (housing, mine facilities), rail upgrades, process facility (rail offloading, crushing, conveying, drying), and power and marine ship loading facilities. Oversaw all aspects of the project including FEED and detailed engineering, procurement, and contracts, both domestic and international, business services (finance, administration, human resources), project controls (cost, planning scheduling), risk, construction, and health, safety, environmental, and community.

- Black Iron Shymanivske Project – Greenville, South Carolina and Kryvyi Rih, Ukraine

  As Senior Project Director, prepared a pre-feasibility study for a new US$1 billion-plus greenfield iron ore mine located near Kryvyi Rih, Ukraine. The project scope included the mine development, waste dumps, tailings facilities, process plant, and infrastructure and utilities to produce 9.1 Mtpa of high-grade iron ore concentrate. This complex study engaged multiple EPC offices, consultants, and contractors in North America, Ukraine, Poland, and the former Soviet Union to obtain Ukrainian regulatory approval.

- Pebble Limited Partnership Project – Vancouver, Canada and Iliamna, Alaska

  As Senior Project Director, completed the pre-feasibility study for the more than US$10 billion proposed mine and processing facility situated near Iliamna, Alaska. Presented the study to the client for review and approval. The project scope included scoping, execution planning, and estimating of a 235,000 tpd copper/molybdenum/gold concentrator facility, a gold plant, a port, supporting infrastructure, utilities, and integration of work performed by third-party consultants. The complex execution of this remote project was logistically and environmentally challenging, requiring significant modularization of the facilities. Undertook various trade-off studies, execution planning, and value engineering activities during this project phase.

- PT Newmont Nusa Tenggara (Newmont) Batu Hijau Project – Sumbawa, Indonesia

  As Engineering Manager, managed the engineering and procurement of a US$1.2 billion grassroots copper/gold mine EPC project located in Indonesia. The project included a mine, primary crushers, an overland conveyor, a 120,000 tpd concentrator, utilities, a port, and various infrastructure facilities. Other responsibilities included overall engineering management, coordination and supervision of area project engineers, and engineering design disciplines. Extensive use of intelligent and integrated design tools (3D PDS) and design work sharing through various international work centers provided a logistical and project execution challenge. The overall project duration lasted three years with a 320 engineering/design peak staff located in the Denver, Colorado home office and five international satellite design offices. Achieved a project savings of US$33 million by implementing a value awareness program.

- Mossgas Onshore Refinery Catalyst Preparation Plant Project – Mossel Bay, South Africa

  As Lead Engineer, responsible for conceptual control systems and detailed engineering and design for this metallurgical and materials handling plant, including development of control strategies, DCS and PLC hardware/software definition, detailed configuration and control logics, shutdown systems, fire and safety systems, field instrumentation, and management of various major mechanical packages.

Food and Beverage Processing Plants and Other Industrial Facilities

- Coors Brewing Company – Golden, Colorado

  As Alliance Director, managed the overall Contractor/Coors Alliance, which annually executed US$70 to $100 million of capital programs/projects in three Coors facilities: Golden, Colorado; Memphis, Tennessee; and Shenandoah, Virginia. The overall program included process (brewing, conditioning, malting), packaging (bottles, cans, kegs), utilities, infrastructure, and small projects. Project sizes ranged from US$20,000 to US$90 million Total Installed Cost (TIC). Accomplishments included a significant improvement of the overall performance of the alliance, including a 20 percent improvement in client satisfaction, value engineering yielding savings of 20 percent of TIC, minority-owned business utilization increase to 7 percent, and a significant improvement in overall program/project execution quality across the entire alliance.

- Coors Brewing Company Capital Projects Program – Golden, Colorado

  Served as Program and Project Manager for various brewing, conditioning, packaging, and utility projects at the Coors Golden Facility. The annual small projects program typically included around 50 EPCM projects ranging from US$5 million to US$30 million.

- African Products Greenfields Project – Kliprivier, South Africa

  As Area Project Manager, managed the 800-tons-per-day corn wet milling and syrups refining areas on this greenfield project. Responsible for all project management aspects of this portion of the overall US$140 million EPCM project. The overall project schedule was fast tracked with some 900 mechanical equipment items and a construction duration of 17 months. The project charter required and achieved a world-class plant that served as a role model for the industry.

- South African Breweries Pietersburg Brewery Project – Pietersburg, South Africa

  As Project Manager, oversaw the utilities controls and instrumentation for a new brewery. Instrument consultancy responsibilities included coordination of engineering, design, final plant construction, and commissioning support. The scope of facilities included boilers and auxiliary equipment, refrigeration, carbon dioxide, and compressed air and water supply systems.

- Sasol III Boiler No. 9 Plant Project – Secunda, South Africa

  Responsible for all engineering/design aspects of an expansion of a Honeywell TDC 2000 distributed control system with extensive cascade control on the Boiler No. 9 Expansion Project.

PROFESSIONAL EXPERIENCE

Long International, Inc.
Denver, Colorado Area (August 2018 to Present)

As a Principal with Long International, Mr. Connell is a key member of the project management, engineering, and construction analysis team. He provides a variety of services including, but not limited to, claims preparation, schedule delay analysis, loss of productivity analysis, standard of care analysis, and arbitration/litigation support. He has provided project management analysis and expert witness services on an international LNG megaproject and a pea protein isolate project.

Fluor Corporation
Greenville, South Carolina; Guinea, West Africa; Tucson, Arizona; Vancouver, British Columbia; and Sandton, South Africa (February 2008 to February 2018)

As an Executive Level Senior Project Director, Mr. Connell was responsible for the overall management of various large and complex mining and chemical related projects in multiple locations on behalf of Fluor's Mining and Metals (M&M) Division. He also served as the General Manager with operational oversight and profit and loss responsibility, and provided project execution oversight of Fluor's M&M business line in Africa. He reported directly to the senior vice president of operations for Fluor M&M. Additionally, Mr. Connell served as an executive committee member of Fluor South Africa, Director of Fluor Botswana Holdings, a board member of the Regional Development Forum for Europe, Africa, and Middle East, Regional Operations Manager/Manager of Mining Projects, and a member of various client steering committees for mining projects in the Sandton office. He was mainly responsible for the business line P&L performance and growth, project execution performance, client relations, talent development, and sales support representing M&M within Sub-Saharan Africa. He successfully developed the M&M group from a few members to approximately 200 project professionals in three years, executing various diamond and coal projects for Debswana in Botswana and mineral sands projects for Rio Tinto in Madagascar.

Jacobs Engineering Group
Denver, Colorado and Calgary, Alberta (July 1999 to January 2008)

As a Senior Manager of Projects and senior management member in the Jacobs Golden, Colorado office, Mr. Connell oversaw all alliances, projects, and programs in the mining, refining, and beverage business lines. This oversight included remote site-based engineering/design teams in various refineries, two EPCM alliances serving clients in the refining and beverage industries, and individual projects in the mining and downstream oil, gas, and refining industries. He was responsible and accountable for these operations from a business perspective, including client relations, business development, EPCM project execution, and quality and recruiting. He also served as department functional head for the project management and engineering group consisting of 26 project professionals in the Denver office. As an Alliance and Senior Project Director, Mr. Connell was also responsible for managing the Coors/Jacobs Alliance. He provided engineering, procurement, and construction services to Coors Brewing Company and multiple clients in the oil sands business in Alberta, Canada. Moreover, Mr. Connell was charged with training a client team of engineers from Sinopec Petroleum Company based in Beijing, China.

Fluor Corporation
Sandton, South Africa and Irvine, California (June 1986 to June 1999)

As a Project Engineering Manager, Mr. Connell was responsible for managing the engineering and procurement of the US$1.2 billion grassroots copper/gold mine EPC project located in Indonesia with extensive state-of-the-art project engineering and design automation. Moreover, he managed an engineering/design peak staff of 320 in the home office and five international satellite design offices. He also managed various brownfield and greenfield projects for various clients in the food/beverage and chemicals industries in South Africa. Mr. Connell gained extensive experience in all aspects of engineering and design, including P&IDs, PFDs, SLDs, 3D plant modeling, and all associated design activities related to the facilities. In addition, he served as a Principal Control Systems Engineer accountable for control systems engineering and design of multiple refining and oil and gas downstream projects for clients in South Africa, Malaysia, Philippines, and the U.S.

African Explosives Chemicals Industry (AECI)
Midland and Modderfontein Factories, South Africa (January 1983 to June 1986)

As a Plant Engineer and Engineer-in-Training, Mr. Connell completed various project engineering, design, and plant support activities in AECI's Consulting Engineering Department within the Midland and the Modderfontein No. 4 Ammonia Plant chemical factories.

PUBLICATIONS AND SPEAKING ENGAGEMENTS

"Application of Blending Technology to Enhance Profits," J. Connell and R. Bhullar, ISA Conference, 1992.