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WestGlen Consult Ltd.
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CURRENT POSITION

Managing Director and Senior Consultant

EDUCATION

- Chartered Engineer
- Member of the Institution of Mechanical Engineers.
- Masters in Mechanical Engineering with Distinction, University of Strathclyde, Glasgow, UK

DATE OF BIRTH

4th August 1978

NATIONALITY

British

LANGUAGE(S)

English (mother tongue), Spanish (fluent), French (written only)

EXPERTISE

- Hydropower including conventional and pumped storage hydro
- Technical Problem Investigation and Resolution
- Project Management & Strategy
- Insurance claims management
- Project Scheduling
- Contracts and Negotiation
- Dispute Resolution
- Commissioning & Testing
- Site Management & Organisation
- Owner's Engineer Services
- Due Diligence

EXPERIENCE

WestGlen Consult Ltd., Renfrew, UK Managing Director and Senior Consultant, Jan-17 to present

Responsible for the management and growth of WestGlen Consult Ltd., providing advisory services to clients on matters ranging from project management and strategy to project planning and scheduling, due diligence and owner's engineer services, insurance claims and recovery, dispute avoidance and resolution, contract management and strategy, technical problem resolution and on-site investigation and monitoring.

Projects include:

- Project lead for the recovery, including leading the insurance claim process, on a 187MW hydropower tunnel collapse project in Georgia;
- Advisory services associated with discovered generator defects on 58MW hydropower project in Panama;
- Site electrical supervision and expediting on a new-build irrigation flow hydropower project in Philippines;
- Contractual and strategy support for the development phase of a large scale hydropower project in Rwanda;
- Project management of the refurbishment of a 100 year-old hydropower plant in Zambia

SN Power, Singapore Director of Projects, Mar-15 to Dec-16

Responsible for overseeing and supporting all ongoing projects worldwide, from preconstruction through to operations. Involving all aspects of the project process, from technical to commercial and contractual, tendering to project completion negotiations. Some examples of project involvement:

- Negotiating the completion of all contracts on the Bajo Frio project following significant delays and cost overruns.
- Establishing the procurement strategy for the Burica Project in Panama and participating in tender negotiations and evaluations
- Project Director for various expansion and development projects associated with SN Power's assets in Zambia
- Project Director for the safe operations project in Zambia, a 5MUSD refurbishment project of existing assets involving the replacement of governors, MIVs, protection and excitation for three 1945 units

Fountain Intertrade Corp., Panama Technical Manager, Bajo Frio Project, Aug-13 to Feb-15

Employed with less than one year until original project completion but with the project suffering notable delays, contractual and technical problems. Whilst originally appointed as Technical Manager, the role was soon expanded to cover all claims management activities in addition to general coordination of both overall and day-to-day recovery efforts to mitigate the delays which had developed on the project. The scope included all matters from civil works through to the transmission line and the electromechanical equipment.

SN Aboitiz Power - Benguet, Inc., Baguio, Philippines
Project Director, AMBI Project, Sep-11 to Jul-13

Project Director for the second phase of the 280MUSD AMBI Project involving the refurbishment of the second of two hydroelectric power stations bought by SN Aboitiz Power in 2008. The Project involved the replacement of all major parts of the turbines and generators, supply of new excitation, control and protection, replacement of the main inlet valves, replacement of the main power transformers including new foundations, new intake and new headrace tunnel including breakthrough and connection into the old headrace tunnel. For the station equipment replacement, although SN Aboitiz Power was the owner, it also took on the role of Principal Contractor for the erection works and was therefore responsible for all site management, logistics, planning and HSE. The project was delivered both ahead of schedule and below budget, with zero major accidents, incidents or LTI's.

SN Aboitiz Power - Benguet, Inc., Baguio, Philippines
Technical Manager, AMBI Project, Mar-10 to Aug-11

Technical Manager for the owner of two 1950's built hydroelectric stations sold off as part of the Philippine electricity market privatisation. The Project comprised a 280MUSD refurbishment of both plants, the first of which had been mothballed since 1999 due to earthquake damage sustained in the 1990 Baguio earthquake. Scope included dam face repair, new intake, new headrace tunnel, blocking of the old headrace tunnel, new el-mech equipment (turbines, generators, main inlet valves, control systems, excitation, protection) and a new 230kV switchyard. As technical manager, had responsibility for overseeing the successful conclusion to the project from an overall technical perspective, involving close work with the engineering consultants and contractors to both overview design and construction / erection quality. Due to difficulties encountered with the originally contemplated approach, a new and technically demanding tunnel alignment was required, as a result of which SN Aboitiz were forced to take on a full design coordination role. The project also concluded with a complicated but ultimately successful tunnel insurance claim associated with the problems encountered with the original approach due to the impact of a major typhoon.

GE Hydro/Andritz Hydro, Laos PDR
Commissioning Leader, NT2 Hydroelectric Scheme, Jul-08 to Feb-10

Consortium leader for the commissioning of this 1000 MW hydroelectric scheme, including 4 francis and 2 pelton units, 2 substations rated at 500kV and 115kV, along with all powerstation and substation control, ancillary equipment, transformers and switchgear. Consortium comprised GE Hydro (later Andritz Hydro), ABB Sweden, ABB Canada and Clemessy.

GE Hydro - Yixing, China
Commissioning Leader, Yixing Pumped Storage Power Scheme, Jul-07 to Jun-08

Consortium leader for the commissioning of the first unit of 4, 250MW reversible pump turbines (the owner was responsible for commissioning of the last 3 machines). Commissioning scope included all unit and station ancillary equipment, unit control systems, protection testing, high-voltage switching equipment in addition to the main generator and turbine testing. Consortium of GE Hydro and ABB.

General Mantenimiento Técnico, SLU, Taragona, Spain
Maintenance Contract Manager, Feb-06 to Jul-07

Responsible for 5 plant maintenance contracts worth a value of €3 million involving the management of a team of 40 fitters and engineers. Reporting to the group director.

Mott Macdonald Ltd., Loch Awe, UK
Contractor Coordinator and Planner – Cruachan U3 & U4, Feb-05 to Nov-05

Following specific owner request, appointed overall contractor coordinator and planner for the 20 contractors involved in a £ 15 million pumped-storage turbine refurbishment, including MIV replacement, main 275/16kV transformer demolition and replacement, penstock and tailrace repairs, servomotor replacement and re-design and pony motor overhaul.

Responsibilities included:

- Production of integrated refurbishment plan
- Daily contractor coordination
- Development of commissioning plan & commissioning coordination
- Work permit approval system design and development
- Claims monitoring and control

Mott Macdonald Ltd., Dalry, UK

Owners Engineer – Earlstoun & Carsfad Refurbishment , Nov-03 to Feb-05

Owners Engineer – Earlstoun & Carsfad Refurbishment Mott MacDonald Ltd
Sole site representative for the owner on this £3 million propeller turbine refurbishment project. Responsibilities included:

- Site supervision and quality inspection
- Technical review of contractor documentation & procedures
- Technical risk evaluation and management
- Manufacturing inspection
- Safety documentation review
- Contract management and claims control
- Commissioning planning and coordination

Project included turbine and guide vane replacement, shaft refurbishment, bearing replacement, regulating gear renewal and re-design, spiral casing and draft-tube treatment and generator repairs.

GE Energy (UK) Ltd., Loch Ness, UK

Commissioning Engineer – Invergarry & Ceannacroc Project, May-03 to Nov-03

Mechanical commissioning engineer on a £20 million refurbishment of a water-to-wire project incorporating five power stations.

GE Energy (UK) Ltd., Loch Ness, UK

Commissioning Engineer –Shin Refurbishment, Jul-03 to Aug-03

Commissioning engineer following turbine and guide vane replacement and machine overhaul

Mott Macdonald Ltd., Glasgow, UK

Project Engineer/Technical Coordinator, Hydro Division, Feb-02 to Apr-03

Various Projects, including:

- Project Manager, Pitlochry Gates Operational Failure Assessment. Independent assessment following a contractual dispute.
- Technical coordinator, Lochaber Scour Pipe Failure. Coordinated the investigation into potential solutions following a severe failure of the main tunnel scour system.
- Hirakud Project, India. Evaluation of contractual performance testing results.
- Technical coordinator, Foyers pumped storage scheme draught tube failure. Coordinated the technical assessment of the proposed emergency solution following the failure of the draught tube lining.

Mott Macdonald Ltd., Brighton, UK
Project Engineer, Hydro Division, Jun-01 to Feb-02

Various projects, including:

- Project Manager, Inverawe Vibration Assessment. Supervised the on-site instrumentation and measurement of the vibration problems encountered with this 25MW Kaplan unit. Carried out the subsequent analysis and presentation of results. Included the coordination of 1 week of running tests at all operating conditions and the subsequent successful return to service of the machine.
- Project Engineer, Budarhals Hydro Development, Iceland. Participated in the production of the mechanical tender specification documents.

Weir Pumps Limited, Glasgow UK
Commissioning Coordinator & Technical Support Engineer, Jun-99 to Oct-99

Responsible for the daily coordination and technical support necessary for the 20 commissioning engineers who formed part of the Weir Engineering Services commissioning department. Included projects in China, India, Norway, Nigeria, etc.

Weir Engineering Services, Glasgow, UK
Technical Support Engineer, Jun-97 to Oct-97

Provision of technical support to the various UK and worldwide service centers. As part of this service, carried out pump and hydro-turbine thermometric efficiency testing, along with analysis of results and recommendations. Included tests carried out at the following hydropower sites:

- Lochaber (Pelton Units)
- Fasnakyle (Francis Turbines)

**PUBLICATIONS /
PRESENTATIONS**

“Breathing life into a decommissioned hydropower plan: A story of the Ambuklao rehabilitation project”, presented at Renewable Energy World Conference & Expo Asia, Kuala Lumpur, September 2011

“Investigation into techniques for determining scour sump efficiency”, Hydro 2003 conference, Croatia, November 2003.

“Resolving vibration problems on a 25 MW Kaplan unit”, The International Journal on Hydropower & Dams, Volume 10, Issue 3, 2003, pp 84 – 88. Joint Author

“The resolution of vibration problems on a 29 MW Kaplan turbine unit incorporating pressure fluctuation analysis”, presented to Hydro 2002 conference, Turkey, November 2002. Joint Author.

“A practical engineering problem: How to collaborate at distance when operating remote heterogeneous CAD systems”, ICMAS 2002 conference, Bucharest, October 2002.