



John C. Brown

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Mr. John Brown is a Civil Engineer with more than forty years of experience in design, construction supervision, management of civil works and business development, mainly for hydroelectric schemes. As Resident Engineer, he was responsible for design, inspection, construction supervision and management of works for hydroelectric projects in the Caribbean and Canada, and for important sugar processing complexes in Africa. As Proposal Manager, he was responsible for the preliminary design and turnkey proposals for various Canadian and international hydroelectric projects that involved mechanical, electrical and civil works, balance of plant, engineering studies, procurement and construction. From 2007 to 2010, he was Director, Turnkey Projects for SNC-Lavalin's Hydro Division, where he managed the development of the Turnkey Group, proposals and projects. In 2010, Mr. Brown was appointed Vice-President, Business Development. In this capacity, he coordinated business development activities and associated budgets to identify new markets and develop new partnerships, as well as prepared strategic marketing plans related to business development in the hydropower sector. He also directed and negotiated partnership agreements for various hydroelectric projects (services and turnkey contracts). Mr. Brown is a member of l'Ordre des ingénieurs du Québec (retired) and the Association of Professional Engineers of Ontario. He speaks French, English, Spanish and some Portuguese.

EDUCATION

1974	B.Sc., Civil Engineering, University of Calgary, Alberta, Canada
1981	Diploma in Management, McGill University, Montreal, Quebec, Canada
1984	Master of Business Administration (MBA), McGill University, Montreal, Quebec, Canada
1990	Advanced AutoCAD, Vanier College, Montreal, Quebec, Canada

EXPERIENCE

2013-present Hydro Development Consultant

- ♦ Hidro Cahora Bassa (HCB) – Assistance with the development of hydro and transmission projects in Mozambique, project analysis, risk analysis, planning

and scheduling, assistance with preparation and review of tender documents, assistance with forming internal project management team.

- ◆ Aediles Capital – Identification and development of energy projects for North and South America.
- ◆ Various – Assistance with preparation of bids for engineering services for large international consulting firms and contractors.

1993-2013 SNC-LAVALIN INC., Montreal, Quebec, Canada

Vice-President, Business Development, Hydro Division (2010-2013)

- ◆ Responsible for the Business Development Team for the Hydro Division.

Director, Turnkey Projects, Hydro Division (2007-2010)

- ◆ Responsible for the development of Turnkey Group, proposals and projects, and risk analysis for projects.
- ◆ Matala Hydroelectric Plant Dam and Spillway Rehabilitation, Angola (2007-2010): Responsible for the EPC team, client negotiations, setting up of a local company in Angola, opening a local office, and all technical, financial and commercial aspects, including obtaining financing and approvals, for the 250M USD EPC contract for the rehabilitation of the dam and spillway.

Proposal Manager (2002-2007)

- ◆ Upper Mattagami Hydroelectric Project, for Ontario Power Generation, Ontario, Canada (2007): Responsible for the preliminary design and turnkey proposal for the Lower Sturgeon, Hound Chute, Sandy Falls and Wawaitin hydroelectric developments totalling approximately 45 MW, including decommissioning and demolition of existing powerhouses, rehabilitation of intake channels and dam walls, design, construction and commissioning of new hydroelectric facilities, including new water-to-wire equipment.
- ◆ Bujagali Hydroelectric Plant, for Bujagali Energy Limited, Uganda (2006-2007): Responsible for the turnkey proposal for the mechanical and electrical portion of the works, including five Kaplan turbine-generator units totalling 250 MW, switchyard and balance of plant, in consortium Jaiprakash Associates of India (civil works).
- ◆ Gove Hydroelectric Plant and Dam Rehabilitation Project, for GABHIC, Angola (2006): Responsible for the turnkey proposal for the mechanical and electrical portion of the works, including three turbine-generator units totalling 60 MW, switchyard and balance of plant, in consortium with Andrade S.A. (AG) of Brazil (civil works).
- ◆ Parbati Hydroelectric Project (Stage III), for the National Hydroelectric Power Corporation, Himachal Pradesh, India (2006): Responsible for the turnkey proposal for the mechanical-electrical balance of plant, in consortium with

Power Machines of Russia (supply of 4 x 130 MW turbine-generator units).

- ♦ Irrigation and Mini-hydro Projects, for INDRHI, Dominican Republic (2005): Responsible for the mixed price proposal (89 M US\$) for engineering studies, procurement and construction of rehabilitation of irrigation works, new irrigation works, and up to 10 mini-hydroelectric plants.
- ♦ Victor Diamond Mine – 450 km of 115 kV transmission lines and 3 substations in Northern Ontario, Canada, for De Beers Canada (2005): Responsible for the turnkey proposal.
- ♦ McVittie 2 MW Hydro Station Expansion and Rehabilitation, for Ontario Power Generation, Canada (2005): Responsible for the proposal for fixed price engineering services.
- ♦ Seymareh 500 MW Powerhouse, for Iran Water and Power Resources Development Co., Iran (2004): Responsible for the proposal preparation team for a turnkey proposal for the powerhouse.
- ♦ Power Systems Improvement Project, for the Corporación Dominicana de Electricidad, Dominican Republic (2003-2005): Responsible for the proposal for upgrading of hydroelectric plants and substations (90 M USD).
- ♦ Proposals for Great Lakes Power and OPG, Ontario, Canada (2003-2004): Management assistance for transmission lines, substations upgrading, and turbine and generator rehabilitation proposals.
- ♦ Guri 10,000 MW Hydroelectric Power Plant, for EDELCA, Venezuela (2003): Responsible for the proposal preparation and team for upgrading of the protection, measuring, supervisory, control and instrumentation systems.

Project Manager (since 2000)

- ♦ Phase 1 design of the Smoky Falls Hydroelectric Development, for Kiewit Construction, in Ontario (January to December of 2009): Responsible for the multidisciplinary team during the preliminary design to allow Kiewit to successfully negotiate an EPC contract with Ontario Power Generation.
- ♦ Technical Due Diligence, for Kruger Inc., in New York State and Virginia, USA (2004): Responsible for the technical evaluation team and report during the due diligence process for the purchase by the Client of several hydroelectric plants.
- ♦ Technical Due Diligence, for Boralex Power in New York State, USA (2003): Responsible for the technical evaluation team and report during the due diligence process for the purchase by the Client of three hydroelectric plants in New York State.
- ♦ Las Palmas Development, for MARN, Venezuela (2000-2002): Responsible for the project management and design of dam, dykes, intake, tunnels and

spillway for an irrigation and water supply project in Cojedes, Venezuela.

Senior Engineer (1996-2000)

- ◆ Audit of Sangtundinskaya 670 MW Hydropower Plant in Tajikistan, for RAO UES of Russia (2005): Project Engineer for the audit of the technical and financial status of the partially completed plant.
- ◆ Technical audit of Boguchanskaya 3000 MW Hydropower Plant in Siberia, Russia, for RAO UES of Russia (2004): Project Engineer for the review of the current state, design, optimization opportunities, load forecasts, and power generation studies for the partially completed plant.
- ◆ Re-evaluation of the Safety of Six Dams in the Malbaie River Basin, for the Centre d'expertise hydrique du Québec (2003): Evaluation of the security of six small dams.
- ◆ Windsor 31 MW Cogeneration Plant, for Domtar, Canada (1999-2000): Lead Civil Engineer for the design and preparation of specifications for the new building structure and foundations, and modifications to existing structures.
- ◆ SM-3 Hydroelectric Development, Sainte-Marguerite River, Quebec, Canada, for Hydro-Québec (1996-ongoing): Responsible for upgrading, implementation and follow-up of a technical configuration management system using Oracle client/server data base.
- ◆ Beauport Calcination Project, 35 MW Cogeneration Plant, for Domtar, Canada (1999): Preliminary design of civil works.
- ◆ Tolima Triangle 35,000 ha Irrigation Project, for the Instituto de Adecuación de Tierras – INAT, Colombia (1997-1998): Managerial and technical support for the completion of studies, specifications and drawings in the Bogota office.
- ◆ Trinalum 350 and 700 MW Thermal Power Plants, Trinidad, for Norsk Hydro A.S.A. (1997): Preliminary design of civil works.
- ◆ Rades II Thermal Plant, 355 MW, Tunisia (1997-1998): Preliminary design of civil works.
- ◆ Jiangya Hydroelectric Project, for Lishui Hydro and Power Corporation, China (1997): Review and advise on tender evaluation reports for submission to the World Bank, in the client's office at Changsha, China.
- ◆ Thermal Power Plant, 20 MW, for Goro Nickel, New Caledonia (1997): Preliminary design of civil works.
- ◆ Dam Inspections, for New Brunswick Power Corporation, Canada (1997): Dam safety inspections for the following developments: Grand Falls, Sisson, Tobique Narrows and Beechwood.

- ◆ Benin/Togo Substation Standards (1996): Preparation of civil works standards for the substations of the electricity companies of Benin and Togo.

Resident Engineer, Seconded to SEBJ (1993-1996)

- ◆ Laforge-2 Hydroelectric Development, James Bay Region, for the James Bay Energy Corporation, Canada: Responsible for site technical assistance, supervision of multidisciplinary design professionals and assuring that the works are executed according to drawings and specifications. The scheme includes a two-unit, 310 MW surface powerhouse, an intake structure and rockfill dams.

1982-1993 LAVALIN - Shawinigan Consultants Inc., Montreal, Quebec, Canada

Senior Engineer (1989-1993)

- ◆ Manic-3A Hydroelectric Development, northern Quebec: Responsible for the implementation and follow-up of a technical configuration management system for this scheme which includes an underground powerhouse and associated hydraulic structures, with a total installed capacity of 630 MW.
- ◆ Hydroelectric Developments on the Grande Baleine and St. Maurice Rivers, Quebec: Responsible for the layout and preliminary design of structures for the pre-investment studies of two developments, which include two or three turbine surface powerhouses and associated hydraulic structures, with a total installed capacity of 408 MW for option 1, or 545 MW for option 2.
- ◆ Grande Baleine Hydroelectric Development in northern Quebec: Responsible for the layout and preliminary design of structures for the pre-investment studies of this scheme which comprises three underground powerhouses and associated hydraulic structures and passages, with a total installed capacity of 3000 MW.
- ◆ Coordinator of personnel, equipment and computer-assisted drafting for the drafting room.

Resident Site Manager (1988)

- ◆ Serpent River Hydroelectric Development, Spanish, Ontario: Responsible for on-site design modifications, construction management, control, inspection and supervision of works and contractors.

1985-1988 LAVALIN – Shawinigan Consultants Inc., St. Vincent, West Indies

Resident Engineer, Civil

- ◆ Cumberland River Hydroelectric Development, St. Vincent, West Indies: Responsible for on-site design, control, inspection and supervision of civil works, pipelines, and contractors.

1982-1985 LAVALIN – Shawinigan Consultants Inc., Montreal, Quebec, Canada

Design Engineer, Civil

- ◆ Cumberland River Hydroelectric Development Project, St. Vincent, West Indies: Layout and design of wood stave and steel pipelines and associated structures.
- ◆ Aluminium fluoride plant at Jonquière, Quebec, for Alcan: Layout, design, and specifications for equipment foundations and concrete works, roads, surface and sub-surface drains, earthworks, and railway spur lines. Involved in writing of steel, concrete and other civil engineering specifications, as well as in site inspection and control.

1980-1982 SHAWINIGAN CONSULTANTS INC., Montreal, Quebec, Canada

Design Engineer, Civil

- ◆ Responsible for proposal and preliminary design of substation buildings, housing and services. Detailed design of concrete and masonry substation building, site modifications, and transformer bases for construction by Janin Construction of Montreal for SONEL of Cameroon, West Africa.
- ◆ Responsible for layout and design of project support services, houses, workshops, maintenance garages, hospital, and related infrastructure buildings, water and sewage, roads and urban planning, and review of architectural drawings for a 7000 ha Finchaa Sugar Estate for Ethiopian Sugar Corporation, Ethiopia, Africa.

1977-1979 REDPATH CONSULTANTS INTERNATIONAL, Montreal, Quebec, Canada

Resident Engineer, Civil (1979)

- ◆ Responsible for design and construction of roads, laboratories, workshops, bulk storage structures, maintenance garages, houses, services, earth and concrete water storage reservoir, and irrigation canals for a 50 hectare experimental sugar farm and a 200 hectare experimental maize farm located in Cameroon, West Africa, for Syndicat National d'Investissement of Cameroon. The construction supervision assignment was for 12 months.

Site Engineer, Civil (1977-1978)

- ◆ Responsible, over a full 2 years' period, for control and supervision of contractors in construction of a major raw sugar processing complex, and for design and construction of diverse farm and associated buildings and services for a 6000 ha cane sugar plantation in Ivory Coast, West Africa, for Sodesucre of Ivory Coast, capital cost of US \$290 million.

1974-1977 SHAWINIGAN ENGINEERING COMPANY LTD., Montreal, Quebec, Canada

Design Engineer, Civil (1975-1977)

- ♦ Involved in civil design of industrial buildings for James Bay Hydroelectric Development Campsite; diesel powerhouse, maintenance garage, workshops, and warehouse for LG-3.
- ♦ Responsible for on site consulting and inspection during construction for 2 months at LG-2 campsite, James Bay.

Civil Engineer (1974)

- ♦ Involved in study of effects of fluctuating water levels on the banks of a river, and feasibility studies and design of dams on St. Maurice River, Quebec, for Hydro-Quebec.

1973 PUBLIC SERVICE OF CANADA, Department of National Defence, Canada

Technician

- ♦ Performed on-site testing and quality control of soils, soil-cement and concrete for construction of an aircraft runway at Cold Lake, Alberta.

PROFESSIONAL ASSOCIATIONS

Order of Engineers of Quebec (retired)
Association of Professional Engineers of Ontario

LANGUAGES

English, French, Spanish, some Portuguese

INTERNATIONAL EXPERIENCE

Angola, Cameroon, China, Colombia, Dominican Republic, Ethiopia, Iran, Ivory Coast, St. Vincent, Thailand, India, Venezuela, Uganda, Honduras, Russia, Tajikistan, Venezuela, Peru, Mozambique