



## **BACKGROUND**

Professional engineer with over thirty years professional experience in project, construction, engineering and study management and engineering design for major industrial, materials handling and process plant.

Extensive experience in overseeing and monitoring of cost plans and scheduling activities associated with major projects and extensive project management and operating experience in a corporate and brownfield environment.

Significant experience in the management of Development Applications for major projects including management of the preparation of Environmental Impact Statements and Statements of Environmental Effects.

Strong background in bulk materials handling and storage, processing facilities and infrastructure projects.

Extensive experience from various operating roles both in heavy industry and large materials handling operations.

Established own Company, Broman Services Pty Ltd, in 2000.



## **QUALIFICATIONS**

- Bachelor of Engineering (Electrical Engineering) University of Newcastle, 1980
- Craftsman Certificate – Electrical Fitter Mechanic, Newcastle 1976

## **AFFILIATIONS**

- Chartered Member – Chartered Institute of Logistics and Transport in Australia (Northern NSW Section Committee Member).
- Member – Australian Institute of Project Management.
- Qualifications and experience meet the requirements for Fellow/Member - Institution of Engineers, Australia.
- Founding Member – AustCoal Consulting Alliance.

**Project Management**

**Study Management**

**Engineering  
Management**

**Owner's  
Representative**

**Project Review and  
Audit**



## **CAREER DETAILS**

**2000 – Present BROMAN SERVICES PTY LTD – Managing Director**

**2004 – Present BROMAN SERVICES PTY LTD**

### ***Founding Member of AustCoal Consulting Alliance***

- AustCoal Consulting Alliance (ACCA) has been formed to enhance shareholder value for the Australian coal industry, its customers and service providers:
  - Coal companies and equity investors
  - Rail infrastructure and operations
  - Port infrastructure and operations
  - Engineering and Contract service providers
  - Professional service firms and
  - Export and domestic customers
  
- In 2006 ACCA members assisted clients with:
  - Strategic Planning
  - Review of business plans and board presentations
  - Analysis of sustainable production capability of Newcastle Coalfield
  - Analysis of planned expansion of Hunter Valley export coal industry
  - Cost of coal supplies to existing and proposed power stations
  - Strategic assessment of unlocking value from mature coalfield assets
  - Strategic analysis of acquisition of coal assets
  - Expert Witness Reports
  - "The Economic Health of the Australian Black Coal Industry Over the Last Two Decades and Key Structural Factors that have Influenced the Industry's Economic Health"
  - Environmental Management and Project Advocacy
  - Environmental Management Systems and Compliance Audits
  - Land use planning conflict with urban development and underground mining
  - Due diligence report for equity investment in major project
  - Community consultation and media relations for major new projects and expansions
  - Change Management
  - Design and implementation of change management strategies



***For Inco Goro Nickel Project, New Caledonia:***

- 2006-2007 - Feasibility Study Management to assess the scope of work, costs and schedule to recommission into service the Goro Nickel Project Pilot Plant in New Caledonia to serve as a training facility for the commercial operation. Estimated Project Cost \$US 10 million.

***For Tomago Aluminium, NSW, Australia:***

- 2006-2007 - Preparation of Feasibility Study Construction Management, Industrial Relations and Environmental Management Plans and detailed construction schedule for Tomago Aluminium's proposed refurbishment of its Anode Baking Oven No 1.

***For the Australian Rail Track Corporation:***

- 2007 - Project Manager for installation of several rail surface lubrication units at strategic locations within the Hunter Valley rail network.
- 2006-2007 - Project Manager for certification of all five Hunter Valley in motion rail weighbridges to meet the requirements of the NSW Office of Fair Trading. Involved the establishment of a 30-wagon reference train which itself required static certification before use over the in-motion weighbridges.
- 2006-2007 - Feasibility Study and Project Manager to relocate Hunter Valley in-motion rail weigh bridges from various locations in the Hunter Valley to the Port of Newcastle. Weigh bridges were relocated to three arrival roads leading to Port Waratah and one at Islington.
- 2006-2007 - Preparation of Capital Submissions for the Hunter Valley (HV) Coal Haulage rail network inclusive of Port Waratah Arrival rerailing and resleepering, upgrade of the Muswellbrook to Drayton sector to 30t axle weight standard, rationalisation and improved reliability of power supply systems for all signalling and points control throughout the HV network and Overbridge renewal programs.

***For Port Waratah Coal Services:***

- 2005 - Team member of a small but high powered team to prepare in short time a preliminary feasibility study for a potential \$1.7 billion extension to the PWCS operations on Kooragang Island, Port of Newcastle.

The Study formed the basis of a submission and bid to a NSW State Government instrumentality for additional land on Kooragang Island for the expanded facilities. Scope included rail infrastructure, yard stacker and stacker reclaimer machines, harbour dredging and berth and navigational channel development, infrastructure and management of contaminated materials and environmental approvals considerations. Included the preparation of the recommendation to the PWCS Board of Directors to approve the project.

- 2005 - Preparation of Tender Documentation, tender review and recommendations to award the Feasibility Study Consultancy for the Kooragang Coal Terminal Stage 3 Step 5 \$170 million Expansion (Pad 'D' Project). This expansion includes a 1400 metre stockyard



development, harbour dredging, new mobile 6600 tph stacking machine, relevant infrastructure and the need to accommodate working within the existing operations with negligible interruption to the operations.

- 2005 - Feasibility Study Management of the Stage 3 Step 5 Expansion Project. Managed and guided Bechtel Australia in the preparation of the Study.
- 2005 - Preparation of and the issue of EPCM tender documentation for the Project Implementation phase of the Stage 3 Step 5 Project.

***For Delta Electricity – Delta Western:***

- Investigation and reporting to determine availability of alternative sources of water for cooling water supplies to serve the Wallerawang and Mount Piper Power Stations
- Review of Bio-mass Plant operations from a safety perspective and making recommendations for Power Station Management's consideration
- Review of water demineralisation plant and concept design to improve water recovery

**2001 - 2004      ENTHALPY PTY LTD / ENTHALPY (NSW) PTY LTD**  
**Project Manager / Manager Enthalpy NSW**

***For the Newcastle Port Corporation***

- As a member of the Owner's Team, provided strategic advice in relation to project structuring, prepared consultancy tender documentation for Procurement Strategy, Feasibility Study and EIS activities, prepared the Feasibility Study Work Plan and consultancy tender assessment criteria and developed the project schedule for the proposed deepening by up to 2 metres of the principal navigational channels in the Port of Newcastle and potential widening of the "Steelworks Channel".
- Concept study into future services and utilities at Dyke Point in the port of Newcastle for the Newcastle Port Corporation.

***For Queensland Sugar Limited***

- Project Manager seconded to Queensland Sugar Limited for the \$65 million expansion of the Townsville Bulk Sugar Terminal, Queensland. The role incorporated the gaining of land and lease arrangements from various parties, overview of cost and scheduling activities, corporate reporting, gaining development approval, project management, construction management and contract Superintendence.

***For BHP-Billiton***

- Support to the Enthalpy personnel established within the BHP Billiton Owner's Team for the Mount Arthur North Coal Project in the Hunter Valley.



**2000 – 2001      DENIS POUT ENGINEERING**  
**Principal Engineer / Project Manager**

***For NSW Rail Infrastructure Corporation***

- Various tasks associated with the haulage of coal to the Port of Newcastle. These consisted of;
  - "Sandgate Junction Capacity Review – July 2001"
  - "Discussion Paper on Refuelling" of locomotives for the Hunter Valley coal haulage task
  - Management of a "Review of Environmental Factors" for the Sandgate Junction Turnout Renewal project – December 2001.
  - For BHP-Billiton
- Development of project management strategies and contract commercial documentation for a proposed major coal mining development near Muswellbrook, Hunter Valley, NSW.

***For Delta Electricity***

- Study into the status of power station fly ash and furnace ash plant operations for a major power station in NSW and preparation of a report outlining options for management of ash for the life of the power station.

**Nov 91 – Oct 00      PORT WARATAH COAL SERVICES**  
**Coal Export Facility – Port of Newcastle**

***As Engineering & Capital Development Manager***

- Major organisational change following the merger of the Carrington and Kooragang Coal Terminals in 1989.
- As Expansion Project Manager, established and maintained teams of professional engineers, contract managers and support staff for successful project delivery. Overview of cost plans and scheduling activities including regular review and corporate reporting.
- As Engineering Manager, established and maintained a team of professional engineers and a trades workforce covering all aspects of engineering, environmental management and maintenance for the two coal Terminals which together formed the largest coal export operation in the world.
- Key leadership role in the development of plans subsequently approved by the Board of Directors to expand the operation from 46 million tonnes capacity to 89 million tonnes by the end of 2001.
- Lead role in documentation, award and management of the Engineering Procurement and Construction Management Contract for the \$345 million first four steps of the Stage 3 expansion of Kooragang Coal Terminal (contract value \$40 million).



- Management of Environmental Impact Statement and Development Consent process for the \$700M Stage 3 expansion of Kooragang Coal Terminal.
- Management of strategic studies and computer simulations to determine the mode of expansion at the Port to meet anticipated future export demand.
- Management of the development and installation of major computer network infrastructure to support the evolving computerisation of Company operations.
- Studies into major mobile machinery fatigue failures to determine the most cost-effective approach to improve machine longevity.
- Preparation of a long-term strategy to cost effectively maintain the aging Carrington Coal Terminal and avoid the need for capital expansion.
- Delivery of capacity increase expansions at the Kooragang Coal Terminal from 1993 through 1998:
  - Ship Reveal Project (\$11 million)
  - Yard Conveyor Extension Project (\$11 million)
  - Stage 2A - second shiploading berth and extended stockyard (\$140 million)
  - Stage 2B - second rail receipt (\$48 million)
  - Stage 2C - second shipping conveyor stream and shiploader (\$112 million)
  - Stage 3A - third shiploading berth (\$90 million).
- Accountabilities included the management of concept and feasibility studies, overview of cost plan and schedule development and establishment of a strategic expansion plan for Board approval.

**Feb 89 – Nov 91**

**KINHILL ENGINEERS**

**Manager Electrical Engineering - Mining and Minerals Division, QLD**  
**Consulting Engineer / Project Management**

***For Queensland Magnesia Operations***

- Design manager and site construction manager of the \$25 million Queensland Magnesia (magnesium oxide fusion) Project in Central Queensland.
- Extensive overseas research in Austria, Germany and Canada on electric arc fusion of magnesium oxide resulting in world class performance of the plant.



**Feb 80 – Feb 89      GHD CONSULTING ENGINEERS**  
**Consulting Engineering / Project Management**

Key roles over nine years in various major bulk materials handling and infrastructure projects through NSW, QLD and the NT. Roles included:

***For NSW Electricity Commission***

- Design management and commissioning of the 6.5 km overland conveyor from Wyee to Vales Point Power Station in NSW for the New South Wales Electricity Commission.

***For MIM Holdings***

- Design management and assistance to the construction management team for the on-shore facilities for MIM's Abbott Point Coal Export Terminal, Bowen QLD.

***For Bulk Grains Queensland***

- Design management and Commissioning of the Fisherman Islands Grain Terminal at the Port of Brisbane, QLD.
- Overseas research on latest technologies in grain handling facilities that were taken through to detailed design of the Fisherman Island Grain Terminal at the Port of Brisbane and resulting in state of the art use of technology.

***For Northern Territory Power and Water Authority***

- Lead Site Electrical Engineer in the GHD-Black & Veatch Joint Venture project management team for the construction of the 200 MW Channel Island gas fired power station, Darwin NT.

***For BHP-Utah***

- Process control design and commissioning of an upgrade to the Mackenzie River water supply which feeds several Central Queensland coal mining operations.

***Miscellaneous***

- Various study work associated with the open pit mining of Nickel Ore in New Caledonia to feed operations in Northern Queensland, Trincomalee Power Station (Ceylon) and other.

**Dec 71 – Feb 79      COMMONWEALTH STEEL COMPANY**  
**Maintenance Superintendent / Project Engineer**

***As Trainee Engineer***

- Heavy industry experience in the areas of speciality steel making (by arc furnace technology), steel rolling, heat treatment and machining.
- Maintenance Management and Project Management roles.
- Trainee Engineer leading to Electrical Trades qualification (NSW) and Bachelor of Engineering Degree (Electrical) from the University of Newcastle.



## **RELEVANT TRAINING**

- "Contract Law", Construction Project Law (International), February 1996.
- "Leadership and Teamwork", Macdonald and Associates, March 1996.
- "Coaching and Counselling", Coach and Team Consulting, June 1996.
- "Managers as Leaders", Macdonald and Associates, September 1996.
- "Workplace Risk Assessment and Control", Liberty Risk Systems, March 1997.
- "General Conditions of Contract", Construction Project Law (International), February 1999.
- "Personal Damage Reduction Through Engineering Design", Intersafe, June 1999.
- "Safety Monitoring and Audit Training", Dupont, July 2000.
- Rail Industry Induction (TSA) Certificate ("Rail Track Safety Awareness Training"), ARTC, December 2005.

## **PROFESSIONAL PAPERS**

- "Automated Grain Terminals", R Broadbent, IE Aust Workshop on Grain Handling, August 1984.
- "Automatic Control of Conveyor Systems", JR Broadbent and DA Pout, IE Aust Second International Conference in Bulk Materials Storage, Handling and Transportation, Wollongong, July 1986.
- "Kooragang Coal Terminal Stage 2A Upgrade – Engineering and Environmental Impact", JR Broadbent, IA Dawson, IE Aust Fifth International Conference in Bulk Material Storage, Handling and Transportation, Newcastle, July 1995.
- "Current and Future Development of the Kooragang Coal Terminal" – Key Note Case Study – IBC Conference on Maritime Structures, Sydney, December 1998.
- "Design of Berth K6 Kooragang Coal Terminal", R Broadbent, RG Turland, 7th Australian Port and Harbours Conference, Perth, April 1999.