

Curriculum Vitae

EXPERIENCE SUMMARY

- Eighteen years' engineering consulting to Australian underground coal mines
- Industry expert in fluid calculations, pipe network design and pump / compressor / vacuum pump selection for underground coal mine water supply, mine dewatering, compressed air supply, nitrogen supply and coal seam gas drainage
- Site-based project management experience
- Office-based design and project management experience
- Concept and detailed design of gas drainage infrastructure, water pipelines/pump stations, underground piped services and processing plants
- Equipment/facility commissioning
- Project management and project controls - scheduling, cost estimating, procurement and cost control
- Contracts and contractor management
- Mine infrastructure planning assessments / strategy development
- Technical and financial feasibility assessments and report writing
- Options analysis / studies for plant layout, equipment / technology selection and system strategies
- Equipment procurement - technical specification and request for tender documentation, including tender evaluation and contract negotiation
- Productivity, reliability and debottlenecking modelling and analyses

EMPLOYMENT HISTORY

2025 – Current **Principal Engineer, Bagnall Engineering**
Cashmere QLD

Refer to website and company capability statement.

2014 – 2025 **Lead Mechanical Engineer, Singleton Engineering Solutions**
Brisbane, QLD

James was a key member of Singleton Engineering Solutions' engineering team since the formation of the company, undertaking project management, client liaison, leading design and project delivery teams, financial analyses, detailed design and analysis of piped fluid systems for underground coal mines. Including development of design and financial analysis methodologies and responsibility for junior engineering staff.

Key projects/roles - ending January 2019 and later:

Project / Job Details	Role/s
Centurion Mine Power Station Mechanical Services – September 2025	Project manager and lead process and mechanical engineer

James Bagnall

Principal Mechanical Engineer

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Moranbah North Mine Nitrogen Network Modelling – September 2025	Project manager and lead mechanical engineer
Moranbah North Mine Gas Drainage System Zero Flaring Project Prefeasibility Study – July 2025	Project manager and lead process and mechanical engineer
Bulga Mine SIS Gas Drainage Pipeline Detailed Design – January 2025 to May 2025	Project manager and lead mechanical engineer
Appin Coal Mine Ventilation Air Methane Abatement FEED Study – August 2024 to March 2025	Project manager and lead process and mechanical engineer
Tahmoor Mine Gas Drainage Plant Commissioning – March 2024 to February 2025	Client-side process commissioning lead
Dendrobium Mine Gas Drainage Plant Design – 2022/23	Pipework design lead
Ironbark No 1 Mine Gas Drainage Plant Design and Commissioning – October 2023 to March 2025	Lead process and mechanical engineer
Ulan West Mine Life of Mine Dewatering Study – June 2023 to February 2024	Project manager and lead mechanical engineer
Ensham Mine Dewatering Investigations – November 2022 to August 2024	Project manager and lead mechanical engineer
Grosvenor Mine Gas Drainage System Incident Investigations – Oct 2022 to June 2023	Project manager and lead mechanical engineer
Broadmeadow Mine Gas Drainage Network Detailed Design – May 2022 to July 2022	Project manager and lead mechanical engineer
Energy Developments Limited Moranbah North and Grosvenor Gas Drainage Network Modelling – Feb 2022 to August 2022	Project manager and lead mechanical engineer
Moranbah North Mine Gas Drainage Department Assistance – November 2021 to September 2023	Project manager and lead process and mechanical engineer
Aquila Mine Gas Drainage Network Modelling (SES Job No: 21054) – Sep 2021 to Nov 2021	Project manager and lead mechanical engineer
Ghuzayn Copper Mine Feasibility Study - Dewatering and Surface Water Handling Systems (SES Job No: 20032) – Apr 2021 to Jul 2021: <ul style="list-style-type: none">➤ Underground dewatering system➤ Surface mine-affected and treated water storage systems➤ Water treatment plant (reverse osmosis)➤ Mine-affected and treated water pump stations➤ Brine disposal and evaporation facilities	Project manager and lead process and mechanical engineer
Moranbah North Mine Piped Services LOM Reviews (compressed air, fire/raw water and dewatering systems) (SES Job No: 21008) – August 2021 to Nov 2021	Project manager and lead mechanical engineer
Integra Gas Drainage Network Modelling (SES Job No: 20041) – Oct 2020 to Dec 2020	Project manager and lead mechanical engineer
Oaky North Compressed Air System Modelling (SES Job No: 20042) – August 2020 to September 2020	Technical reviewer
SIS Well Intersection Gas Flow Estimates (SES Job No: 20039) – July 2021	Technical reviewer

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Grosvenor Mine Piped Services Life Of Mine Modelling Studies (SES Job No: 20031) - Fire/Raw Water and Compressed Air – October 2020 to March 2021	Project manager and lead mechanical engineer
EDL Integra LW12 Tie In Gas Drainage Network Modelling (SES Job No: 20041) – October 2020 to December 2020	Project manager and lead mechanical engineer
Grosvenor Gas Drainage Network Modelling and Five Year Plan (SES Job No: 20017) – July 2020 to July 2021	Project manager and lead mechanical engineer
Grosvenor Mine Fire/Raw Water System Life Of Mine Modelling Study (SES Job No: 20019) – April 2020 to July 2020	Technical lead
<p>Aquila Mine Longwall Project Implementation (SES Job No: 19046) – July 2019 to Feb 2022:</p> <ul style="list-style-type: none">➤ Fire / Raw Water Systems (project packages IS012, US012, IS014 and CC002.2):<ul style="list-style-type: none">➤ Upgrade underground mine feasibility study design, including site water balance modelling➤ Development phase underground mine supply infrastructure, including buried supply pipeline, 300kL tank, pump station replacement, borehole➤ Longwall phase underground mine supply infrastructure, including surface pipeline and borehole➤ Overland conveyor ACV002 fire/raw water system supply infrastructure, including buried supply pipeline, 350kL tank and pump station compliant to AS2941➤ Compressed Air Systems (project packages IS013, US013 and IS014):<ul style="list-style-type: none">➤ Upgrade underground mine feasibility study design, including site-wide supply modelling➤ Development phase underground mine supply infrastructure, including new 4 x 250kW electric compressor station, two new boreholes and diesel hire compressors for interim supply➤ Longwall phase underground mine supply infrastructure, including surface pipeline and borehole➤ Dewatering System (project package US015):<ul style="list-style-type: none">➤ Upgrade underground mine feasibility study design, including flow modelling➤ Development phase underground mine infrastructure, including new flameproof pump pod➤ Longwall phase underground mine infrastructure, including new mains pump station, borehole and surface pipeline➤ Longwall emulsion system (project packages US014 and IS014):<ul style="list-style-type: none">➤ Upgrade underground mine feasibility study design➤ Underground mine supply infrastructure, including surface pipeline and borehole	Piped services package manager, lead mechanical design engineer
Grasstree FRW System Modelling (SES Job No: 19040) – July 2019 to April 2020	Project manager and lead mechanical engineer
Caval Ridge Mine Chain Feeder Failure Analysis (SES Job No: 18074) – October 2018 to January 2019	Technical lead

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Grosvenor Mine Piped Services Life Of Mine Modelling Studies (SES Job No: 18013) - Fire/Raw Water, Dewatering and Compressed Air – September 2018 to January 2020	Project manager and lead mechanical engineer
Aquila Longwall Project Feasibility Study (SES Job No: 18056): <ul style="list-style-type: none">➤ Piped Services Lead - September 2018 to July 2019➤ Conveyor Calculations and Implementation Strategy - October 2018	Piped Services - Package lead Conveyors – Technical lead
Moranbah North Mine Gas Drainage Pipelines Design (SES Job No: 18044) - July 2018 to December 2019	Project manager and lead mechanical engineer

Key projects/roles - ending December 2018 and earlier:

- Kestrel Mine Trunk Conveyor Design Review (SES Job No: 18067) – September 2018 to November 2018
- Kestrel Mine MG Trippers Procurement (SES Job No: 18051) – September 2018 to October 2018
- Broadmeadow Mine Gas Drainage Pipelines and Automatic Low Point Drain Design (SES Job No: 18030) – July 2018 to December 2018
- North Goonyella Conveyor Upgrade Dynamic Calculations (SES Job No: 17065) – February 2018 to March 2018
- AngloAmerican Gas Drainage Projects – June 2017 to August 2018 (site-based role):
 - Grosvenor Hydraulic Stimulation (Fracking) Project (\$5.5M budget) – Project Manager – January 2018 to September 2018
 - Grosvenor Gas Plant Cooling Tower Project (\$0.5M budget) – Project Manager – September 2017 to April 2018
 - Grosvenor GRVG008/009/010 SIS Well Installations (\$6.0M budget) – Project Manager – September 2017 to February 2018
 - Grosvenor TG104 Goaf Drainage Pipeline and River Crossing Design – Design and Procurement Lead - September 2017 to November 2017
 - Moranbah North EDL Grosvenor Power Station Regulator Station Project – Project Manager – June 2017 to November 2017
- Moranbah North Mine Rail Underbore Crossing Design (SES Job No: 17012) – May 2017 to July 2017
- Oaky North Piped Services System Reviews – Fire/Raw Water, Compressed Air and Dewatering (SES Job No: 17018) – May 2017 to June 2017
- Broadmeadow Stonedust Pneumatic Conveying System Assessment (SES Job No: 17020) – April 2017 to May 2017
- Grosvenor Goaf Drainage Pipeline Network Design (SES Job No: 17008) – April 2017 to May 2017
- Ensham Conveyor Debottlenecking Study (SES Job No: 16040) – January 2017 to April 2017
- Kestrel Underground Compressed Air Study (SES Job No: 17004) – January 2017 to February 2017
- Oaky North Underground Fracking Plant Assessment and Certification (SES Job No: 17005) – January 2017
- German Creek Stacking Conveyor Dynamic Analysis (SES Job No: 17001) – January 2017

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- Schenck Iron Ore Train Load Out Chute DEM Modelling (SES Job No: 16037) – December 2017 to February 2017
- Global Product Supply Fabrication Design Assessment and Certification (SES Job No: 16038) - December 2016 to January 2017
- Broadmeadow Maingate Conveyor Transfer DEM Modelling (SES Job No: 16027) – November 2016 to December 2016
- Yuleba Minerals Dust Extraction System Design and Procurement (SES Job No: 16020) – November 2016
- Ensham Mine Compressed Air System LOM Review (SES Job No: 16013) – August 2016 to September 2016
- Grosvenor Mine Gas Drainage Department Engineering Support (on site role) – December 2015 to July 2016:
 - Coal seam gas vacuum pump station and flare/compression plant commissioning, compliance audits, and maintenance strategy development
 - Gas suction and pressure pipelines commissioning and maintenance strategy development
 - Upstream gas production (well head) equipment procurement, commissioning, condition assessments, compliance audits, and maintenance strategy development
 - Project management of seam hydraulic fracturing trial
- Moolarben Coal Underground Project – Underground Coal Clearance System Tender Evaluation Assistance
- Oaky North Mine Compressed Air and Fire/Raw Water Supply Reviews
- North Goonyella Mine South Maingate Conveyor Dynamic Calculations
- Adani Carmichael Mine Tender Evaluations:
 - Coal clearance system
 - Outbye services (underground power, comms and monitoring, and dewatering systems)
- Bulga Complex Woodlands Hill Seam Prefeasibility Study – UG Piped Services Design and Cost Estimation
- BMA Caval Ridge Chain Feeder Failure Investigation
- Grosvenor Underground Mine Implementation - Development conveyor dynamic analysis calculations
- Grosvenor Underground Mine Implementation - Operational Readiness Team - Surface Infrastructure Mechanical Lead (on site role) - October 2014 to Mar 2015:
 - Mechanical and electrical plant commissioning
 - Conducting facility handover inspections
 - Liaison between mine operations and project teams
 - Facility maintenance strategy development
 - Ordering facility spares holdings
 - Management of facility rectification/upgrade works
 - Contractor management
 - Management of specialist trades team
 - Facilitating operational risk assessments

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- Short term management of facility operations and maintenance
- Vale Integra UG CCS Review – Coal Clearance System Reliability and Availability Modelling
- BMA Project Harley Cleanskin Pit Coal Clearance System Design and Cost Estimation
- Springsure Creek Coal Mine Project Feasibility Study – Coal Clearance System Specification and Tender Evaluation

2009 – 2014 **Mechanical Engineer, MineCraft Consulting Brisbane, Qld**

James' role as Mechanical Engineer with MineCraft Consulting transitioned from junior engineer to technical expert in piped services design and analysis for underground coal mines. This included a significant amount of technical training/mentoring, detailed calculations and design, Australian and international standards research, technical software use, and technical report writing.

Projects/roles:

- Bulga Complex Woodlands Hill and Glen Munro Seam Studies - Coal Clearance System Design and Cost Estimation
- Grosvenor Project Implementation:
 - Mine piped services designs
 - Project phase development conveyors capability assessment
- Aquila Underground Mine Feasibility Study and Execution Phase – Underground and Surface Coal Clearance System Cost Estimation, Specification, Tender Evaluation, and Contract Negotiations
- Moranbah North Mine Second Gas Pipeline Project (4 months office, 7 months site):
 - Pipeline detailed design
 - Equipment and contractor works scoping and specification
 - Procurement
 - Construction supervision / project engineering
 - Commissioning / handover to operations (including documentation)
- Aquila Underground Mine Prefeasibility Study:
 - Coal clearance system options assessment
 - Coal clearance system design and cost estimates
 - Coal clearance system reliability and availability modelling (ROM stockpile sizing and CHPP feed modelling)
- Hume Underground Mine Prefeasibility Study – Underground Coal Clearance System Design and Cost Estimates
- Oaky Creek North Mine Site Assistance:
 - Coal clearance system upgrade assessment
 - Piped services upgrade assessment
- Oaky Creek North Mine Eastern Expansion Feasibility Study – Coal Clearance System Design and Cost Estimates
- Crinum North Mine Execution Phase - Maingate conveyor dynamic analysis calculations

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- Grosvenor G2 Prefeasibility Study – Piped Services Design and Cost Estimates
- Oaky Creek North Mine Eastern Expansion Prefeasibility Study:
 - Underground coal clearance system options assessment
 - Underground coal clearance system design and cost estimation
- Broadmeadow Sustaining Operations Project Execution Phase:
 - Coal clearance system reliability and availability modelling (stockpile sizing)
 - Longwall top coal caving availability/productivity modelling
 - Ventilation air flow conveyor interaction assessment (utilising computational fluid dynamics)
- Crinum M Block Feasibility Study – Underground Ventilation Study (VentSim modelling and system design)
- Crinum M Block Prefeasibility Study - Coal Clearance System Reliability and Availability Modelling (stockpile and surge bin sizing)
- Eagle Downs Feasibility Study – Underground Coal Clearance System Design
- Ravensworth Underground Mine Liddell Seam Project - Coal Clearance System Specification, Tender Evaluation, and Contract Negotiations
- Sydney Metro Rail Project – Subway Environment Simulation (SES) Modelling
- Bulga Complex UG Mines Prefeasibility Study – Underground Coal Clearance System Design and Cost Estimates
- Broadmeadow Sustaining Operations Feasibility Study:
 - Mine piped services design and cost estimates
 - Eureka creek crossing services bridge options assessment
- Blakefield South Project - Underground Coal Clearance System Specification
- Ravensworth Underground Coal Clearance System Capacity Assessment
- Crinum North Underground Coal Clearance System Capacity Assessment
- Dawson Mine Water Pipeline Projects - Flow Calculations and Pump Specifications
- Metropolitan Mine Upgrade Feasibility Study:
 - Longwall availability/productivity modelling
 - Surface and underground conveyors design and cost estimates

2008 – 2009 **Mechanical Engineer, WorleyParsons Brisbane, Qld**

During his time at WorleyParsons James was seconded to the Guinea Alumina Project pump specification team. As part of a team of four mechanical engineers, this role included undertaking fluid system calculations and preliminary pump selections for over four hundred pumps for the refinery and associated power station. This required a detailed knowledge of the alumina refining process, the ability to read process flow and piping and instrumentation diagrams, liaison with other engineering disciplines, writing contract scope of works and specifications, and undertaking options analyses.

Projects:

- Guinea Alumina Project – Pump Selection/Specification Team

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2006 - 2008 Graduate Mechanical Engineer, KBR Brisbane, Qld

James' first occupation after finishing his bachelor's degree was with KBR's Minerals Process and Industrial Group. This role included assisting the group's senior and lead mechanical engineers undertake calculations, liaise with equipment suppliers, develop contract scope of works and specifications, and write reports for large and medium sized projects in various industries.

Projects:

- Kestrel Coal Mine Extension Execution Phase:
 - Surface piped services design
 - Surface coal handling plant conceptual design, scope and specifications
- Olympic Dam Processing Plant Upgrade Projects:
 - Installation of two additional acid leaching tanks
 - New ventilation system for all seven leaching tanks
 - Two new copper concentrate thickeners
 - Scats screening facility located directly after the mills
- Grosvenor Underground Coal Mine Prefeasibility Study Recosting

EDUCATION

Degree	Institution	Year
Bachelor of Engineering (Mechanical) with Honours	University of Queensland	2006
High School Senior Certificate	St. Patrick's College, Gympie	2001

CERTIFICATIONS / REGISTRATIONS / LICENCES

- Engineers Australia Chartered Professional Engineer (CPEng)
- Registered Professional Engineer of Queensland (RPEQ) – Registration No: 17395
- Qld Coal Mining Industry “Standard 11” Generic Induction – Opencut and Underground
- S1/2/3 Mining Supervisor
- G2 Risk Management Facilitator
- Qld General Safety Induction (Construction Industry), “Blue Card”
- Hazardous Area Classification (UEEHA0017 and UEEHA0018)

REFEREES

Supplied upon request