



M 0434 434 755
Email gil@agrelectrical.com.au
Web www.agrelectrical.com.au

PO Box 3554
Victoria Pt West
QLD 4165
ABN 84 924 528 851
ACN 128 812 055

AGR Electrical Engineering

Capability Statement

Gil Rhodes

Principal Electrical Engineer
BEng (Elect & Comp Hons)
RPEQ Electrical 08979, FIEAust, CPEng, NER
Electrical Fitter/Mechanic QLD License No A32734

AGR Electrical Engineering holds and is covered by:

- Public Liability Insurance
- Professional Indemnity Insurance
- WorkCover Queensland Insurance

Full Electrical Engineering Services
HV/LV Power Engineering
Project & Design Management
Construction & Commissioning
Plant Support & Optimisation
Process Control & Automation
PLC, DCS & SCADA
Industrial Networks & Data Systems
Energy & Waste Management
Medium/Large Scale Solar & Renewables



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AGR Electrical Engineering Capabilities...

Leadership and Expertise and in Electrical Engineering, Design and Project Management of small to large endeavors from planning to completion including

- HV Supply, Reticulation and Protection up to 275kV including IEC 61850
- HV/LV Substations, Equipment and Systems
- HV/LV Distribution and Motor Control Centres including
 - Design, Testing and Commissioning
 - Loading and Performance
 - Protection Schemes, Fault Level Studies and Coordination
 - Power Quality/Harmonic Studies and Mitigation
- Solar & Renewables ranging from >30kVA to large scale 100MVA+
- Data Centre Power and Reticulation Design, Protection Coordination Studies
- Power Factor Correction (PFC) Design, Specification and Commissioning
- Essential Services including Generator, UPS and Failover Systems
- Plant Control Systems, Communication Networks and Other Equipment including
 - General Light and Power
 - Emergency and Egress Lighting
 - Camera Systems
 - Networking (fibre/copper)
- Constructions Works Supervision and Coordination with
 - Design Personnel from other disciplines
 - Site Personnel and Contractors
 - Supply Authorities and Regulatory Bodies
- Project Supervision and Management including
 - New/Existing Construction through to Commissioning
 - Minor/Major Shutdown Planning, Coordination and Execution
 - Overhaul & Return to Service Engineering Support

Hands on Plant Support and Control System Work

- PLC, DCS, HMI and SCADA Programming
- Control System Management and Support
- Data Management Systems and Network Administration
- Electrical Support to Operators/Maintainers
- Process Control Implementation, Automation, System Tuning and Plant Optimisation

Knowledge, Ability and Experience in Energy Management

- Energy Usage and Wastage Identification and Auditing
- Action Plans, Opportunity Identification and Feasibility Studies (ROI)
- Implementation and Re-Assessment of Reduction Measures
- Awareness of Federal and State Energy Efficiency Programs

From hands on experience & a proven engineering record through to trusted networks & on-demand resources, AGR Electrical Engineering has the understanding & capability to ensure your project is successfully designed, managed and completed to best industry practice and well above required standards.

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AGR Electrical Engineering has been assisting with engineering related designs, projects and long term ongoing work for small to large companies...

PHE Gympie – 2019

Altus Tuan Wood Pellet Plant Upgrade Design



Energy Power System Australia (EPSA) – 2019

Various Projects Design & Engineering Reviews



SES Australia - 2018

Data Centre Design Power Studies (DLR Syd/Mel, UTS, Melb Uni)



Primo Smallgoods - 2018

Wacol Plant (Site Wide Power Distribution System Review)



CR Webster & Associates – Since 2014

Various Power Studies, Electrical Engineering and Design Works



Coregas – Since 2012

Plant Automation Upgrades and Operations Support



Kone Cranes Australia – Since 2013

Electrical Distribution System Design

- HV/LV Distribution Design & Installation Support
- Project Assistance & Management



Applied Electro Systems – Since 2012

Electrical System Design

- HV & LV Distribution System Design
- Engineering Assistance



Ryan Wilks – Since 2012

Electrical System Design

- Supply Authority Interfacing, LV Distribution
- Project Drawings and Approvals



Alliance Automation – 2012/13

Electrical, Instrumentation and Control System Design

- LV Distribution, Motor & Plant Control, Installation
- Project Drawings, Specifications & Construction Documents
- Project Team Management and Site Support



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AGR Electrical Engineering is well into the solar and renewables industry in Queensland and has provided engineering and RPEQ approvals for...

Todae Solar – Since 2018

RPEQ Solar Certifications

- Primo 2.6MW
- Costco 940kW
- XXXX Brewery 690kW (Pictured)



Harvey Norman Commercial – 2019

RPEQ Solar Certifications & Training – Multiple 80kW Systems

Greenwood – 2019

RPEQ Solar Certifications & Training Course Presentations

Solgen Energy – 2019

RPEQ Solar Certifications – Multiple 80kW Systems



Smart Commercial Solar – 2019

RPEQ Solar Certifications – Large 3MW Rooftop



Solar Farmers – Since 2013

Electrical and Control System Engineering

- LV Distribution, Solar Installation Assistance
- Project Documentation and Commissioning



Clean Peak – 2018

RPEQ Solar Certifications – 450kW Bribie Island Shopping Centre



Other Solar Clients:

- Warrick Solar
- Celtic Solar
- Comm Power Industrial
- Modergy
- Integrelec
- Evergreen Electrical
- TJS Electrical
- Connect 4 Electrical
- Expert Electrical
- Salt Solar
- SolarOn Electrical
- Various others...

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Current & Past Projects...

CUB Yatala Various Upgrade Projects

Electrical Design Review and Reporting

- LV Distribution System Design & Augmentation
- Instrumentation, Control & Automation Design



A proud part of the
ABInBev family

West Moreton Ipswich Hospital Main Switchboard Upgrade

Electrical Design Review and Reporting

- LV Main Switchboards & Building Distribution Systems
- Electrical design for Mains & Generator Supplies to Hospital



NSW Parliament House Switchboard Upgrade Projects – 2015/2017

Electrical Design Review and Reporting

- LV Main Switchboards (3x3200A) & Building Distribution
- LV Mechanical Services and Generator Supply Switchboards
- Full protection study for Main & Generator Supply



NSW Keepit Dam Upgrade Project – 2014

Electrical Design Review and Reporting

- HV Supply & Equipment, Earthing & LV Distribution Design



CoreGas Darra Upgrade Project – 2013

Electrical Design and Control System Programming

- LV Distribution, Motor & Plant Control, Process Sequencing
- Project Drawings, Specifications and Construction Documents



LinkWater Water Quality Monitoring Project - 2010

Electrical Design Support and Project Management



ZeroGen Project - 2009

Electrical Design Engineering and Project Management

- Full LV & control system design through to commissioning



Rocky Point Green Power Biomass Upgrade Project - 2009

Electrical Design Engineering and Project Management

- LV Distribution & Control including MCC/Safety System Design



Gibson Island Advanced Water Treatment Project – 2008/09

Electrical Design Engineering and Project Management

- 33kV/415V Supply, Reticulation, Equipment & Protection
- LV Distribution including Loading, Protection & Harmonic Studies



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AGR Electrical Engineering has also been part of projects in an electrical engineering, design support and management role that includes:

RCR Tomlinson – Large Scale Solar Project – 2017

- Design Management & HV/LV Engineering



BHP Billiton \ BMA - Various Projects – 2015-2017

- HV/LV Engineering and Support
- Clients Electrical Engineer
- Operational Technology Project Management



BHP Billiton Mitsubishi Alliance

Origin Energy - Various Major Projects – 2013/2014

- Water Treatment Plant Projects
- HV/LV Engineering and Support
- Design, Package and Site Project based roles



AMEC - Various Projects and Studies – 2010 to 2012

- Mining, Mineral Processing and Oil & Gas Projects
- Australia and Overseas with design based in Brisbane



PBBeca Victorian Desalination Plant (VDP) – 2010



**SNC Lavalin Malaysian Iron Ore Project (MIOP)
Feasibility Study – 2009**



Other project, plant support, optimization and energy management work that includes:

Rocky Point Green Power Plant – 2006 to 2011



**Callide Power Plant C3 & C4 Overhauls – 2006 & 2008
Power Station Overhaul Technician Coordinator**

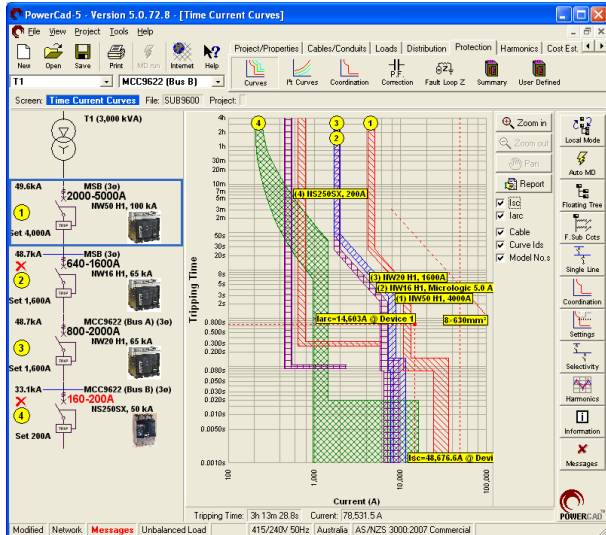


Fosters Australia (Carlton & United) Breweries – 2001 to 2006



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AGR Electrical Engineering is across Australian Standards and Best Practice Engineering for Electrical Installations and Process Plants across various industries.



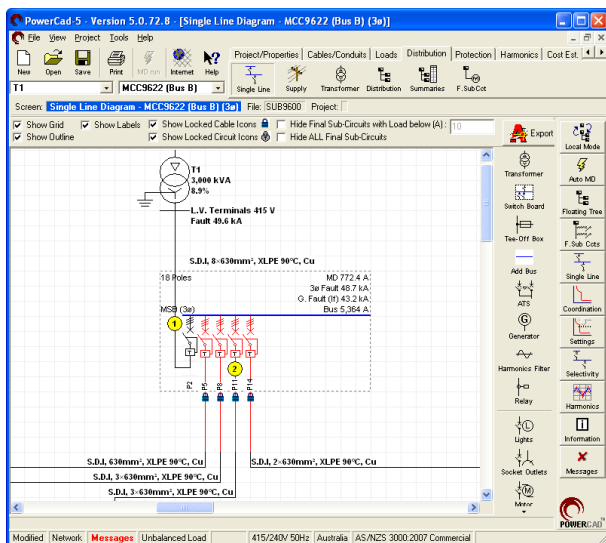
AGR Electrical Engineering uses



PowerCad-5™ has been used to assist and document the design in the above projects:

- Cable Sizing
- Cable Voltage Drop Calculations
- Fault-loop Impedance
- Let Through Energy
- Cable Thermal Stress
- Conduit Sizing
- Maximum Demand
- Circuit Breaker Selection
- Selectivity/Cascading Coordination
- Full Discrimination Studies
- Fault Level Calculations
- Arc Fault Calculations
- Single Line Diagram Representation
- Power Factor Correction
- Harmonic Analysis & Filter Sizing
- Network Resonance
- Substation Sizing
- Standby Generator Sizing
- L.V. Distribution Network Modeling

More information can be found at <http://www.powercad.com.au/powercad5.php>



AGR also has excellent relationships with Supply Authorities, vendors, suppliers, manufacturers, construction companies, testing organisations and many more to ensure the solution is safe, compliant, accurate and achievable for any requirement.