

## LIST OF SOME OF THE PROJECTS WE COMPLETED SUCCESSFULLY SINCE 2003:

- *End Customer: Renergen*  
*Customer: Tetra4 (Pty) Ltd.*  
*Date: 2021/01/01 - Present*  
*Description: Advisor/Consultant, E & I design engineer, specialist electrical engineer.*  
*Scope: The client, Tetra4, will be developing the Virginia (Free State) natural gas (LNG) field.*  
*My function is to ensure that an alternative power supply is available to commission and operate the product facilities until the 33kV Eskom network becomes available (Q12022).*  
*I was responsible for evaluating and approving the design for the integration and connection of the 8MVA diesel/gas generation plant. In addition, I provided tender and procurement assistance for the electrical equipment e.g. MV switchgear (33kV and 6.6kV) and power transformers. I prepared technical specifications, evaluated and assisted with the adjudication of technical tenders. I witnessed FATs and SATs for the electrical equipment and provided installation and commissioning support.*  
*Equipment: Yanmar (Himoinsa generator sets), 36kV Schneider RMU, ZestWeg 6.6kV switchgear (with ABB ACBs) and ZestWeg power transformers (1 x 7MVA and 2 x 1.5MVA)*
- *End Customer: Northern Platinum*  
*Customer: Keech Furnace Technologies (Pty) Ltd.*  
*Date: 2020/11/01 – 2021/05/31*  
*Description: Advisor/Consultant, E & I design engineer, specialist electrical engineer.*  
*Scope: KFT to design, manufacture and deliver 2 of 2.3 MVA Electrical Arc Furnaces to Northam Platinum's Zondereinde works, near Thabazimbi in the Limpopo province. These furnaces will process Platinum Group Metals and concentrated slag.*  
*I was responsible for producing the furnace and associated transformer's PVI curve and also for reviewing the transformer design. I completed the electrical and instrumentation designs for all furnace equipment including MV and LV switchgear. I generated and completed complete engineering packs for both E & I. I assisted with the preparation and completion of an Operating and Control philosophy document. I also participated and provided input at HAZOP meetings*
- *Customer: ECM Services (Pty) Ltd.*  
*Date: 2020/04/01 - Present*  
*Description: Advisor/Consultant, E & I design engineer, specialist electrical engineer*  
*Scope: I work on various projects and is responsible for electrical and instrumentation designs and for drawing electrical and control diagrams for various clients, e.g. iron ore and manganese mines in the Northern Cape.*  
*Sign off on designs in my capacity as a professional technologist, registered with ECSA.*

- *Customer:* Tiprow Controls (Pty) Ltd.  
*Date:* 2019/08/01- 2020/03/31  
*Description:* Electrical advisor/consultant and proposals engineer.  
*Scope:* Reviewed and analysed enquires and designs and recommended solutions to Tiprow and its clients for the design, manufacture and testing of LV Switchgear in accordance with relevant standards, policies and procedures. Assessed and estimated labour and material costs for the purpose of calculating selling prices. Negotiated prices with suppliers. Reviewed contractual terms and conditions and formulated tenders in accordance with customer requirements. Interacted with Tiprow clients and potential new clients with the aim to promote the business interests of Tiprow and to increase sales and opportunities.
- *End customer:* EBM Project  
*Customer:* CDE Process (Pty) Ltd.  
*Date:* 2018/09/01- 2019/09/30  
*Description:* Electrical advisor/consultant and construction supervisor (electrical).  
*Scope:* I was responsible for the electrical designs and coordination of the refurbishment (and specification of new equipment) of existing medium voltage switchgear, distribution transformers, induction motors and variable speed drives. I overseen the procurement, design, manufacture, delivery and installation of new motor control centres (MCCs) and electrical boxes. I provided advice and I steered the plant earthing and lightning protection audit, done by a third party. In addition, I monitored and verified the quality of the earthing and LPS installation and testing on new buildings and structures.
- *End customer:* Eskom, Medupi power station (Main cable contract).  
*Customer:* Actom Contracting (Pty) Ltd.  
*Date:* 2017/03/01- 2018/08/31  
*Description:* Quality and Drawing office manager for consultant group: Royal HaskoningDHV (Pty) Ltd.  
*Scope:* I am responsible for the overall quality of the RHDHV design effort, covering cable racking and routing, small power and lighting as well earthing on the 6 x power islands an common plant.
- *End customer:* Eskom, Kusile power station (C&I project).  
*Customer:* ABB SA (Pty) Ltd.  
*Date:* 2015/04/01- 2016/05/31  
*Description:* Engineering and Design on a consulting basis (mainly electrical reticulation for C&I equipment, 400/230V AC and 24V DC distribution).  
  
*Scope:* Prepare technical scope for Distribution Boards, prepare technical documents for tender purposes. Evaluate tenders. Visit and inspect manufacturing facilities of potential vendors. Design DB board layouts and generate wiring diagrams as well as supporting documentation.

- Customer:* SunEdison (Pty) Ltd.  
*Date:* 2014/05/01- 2015/03/31  
*Description:* Engineering and Design Manager (mainly electrical reticulation projects – HV, MV and LV equipment). Electrical Consulting: distribution and grid connection of PV plants. Dealing with electrical engineering aspects during the project execution phase.  
*Scope:* Provide technical support to other departments: such as projects, legal and business development. Responsible for technical books for DOE bid submissions in REIPPP phase 4, Small IPPs as well as Distributed Generation (PV plants).
- *End customer:* Africary (Pty) Ltd.  
*Customer:* CDE Process (Pty) Ltd  
*Date:* 2013/12/03-2014/04/30.  
*Description:* Principal electrical engineer (mainly electrical reticulation projects – HV, MV and LV equipment). Electrical Consulting: distribution and grid connection of future UCG (underground coal gasification) plant.  
*Scope:* Responsible for designs, calculating and specifying cable sizes, cable routing, specifying electrical motors, HV, MV and LV switchgear. Design and produce Single Line Diagrams, power cable schedules, motor lists. Prepare RFQ documents and specifications for electrical equipment.
  - *End customer:* Eskom related projects: e.g. Tutuka P/S Brine plant and outside plant, Ingula pumped storage scheme, PV Plants, etc.  
*Customer:* Dynamic Instruments (Pty) Ltd  
*Date:* 2011-2013/11/30.  
*Description:* Project engineer (mainly electrical and instrumentation installation and construction related projects). Electrical Consulting: distribution and grid connection of future PV plants.  
*Scope:* Responsible for designs, calculating and specifying cable sizes, cable racking design: loading and routing, panel layout designs for JB's, DB's, SOV's, LCS and LOP panels, schematic diagrams, etc.  
*Equipment:* Various manufacturers. Limited exposure to Smart Plant Electrical (SPEL).
  - *End customer:* Various customers from the mining, utility (Eskom) and municipality sectors.  
*Customer:* ABB SA  
*Date:* 2012-currently.  
*Description:* Sub-contracting to the MV switchgear service department (PPMV), doing various designs for the protection and control of MV switchgear.  
*Scope:* Responsible for designing and draughting of schematic diagrams as well as panel arrangements and layouts for various MV switchgear panels.  
*Equipment:* ABB Unigear and Reyrolle type switchgear with protection relays and auxiliary equipment from various suppliers.

- End customer:* Buffelsfontein gold mine, Brandspruit coal mine (SASOL).  
*Customer:* REAS Electrical  
*Date:* 2011-2015.  
*Description:* Supplied and commissioned generator controllers for 4 x 1.2MVA generators operating in parallel.  
*Scope:* Responsible for designing and draughting of schematic diagrams. Tested and optimized synchronization and load sharing functions.  
*Equipment:* Basler analogue AVR, Woodward digital governor, CRE Technology genset controllers. Various temperature and pressure sensors.
- End customer:* Transnet Pipelines and NMPP  
*Customer:* Siemens Oil and Gas  
*Date:* 2009 – 2011  
*Description:* Systems *engineer* responsible for the interface between electrical, instrumentation and software disciplines relating to petrochemical projects.  
*Scope:* Basic and detailed designs, Participate in HAZOP studies, Controlling engineering resources assigned to my projects and to ensure engineering budget stays within limits, Commissioning of all E&I equipment and automated processes.  
*Equipment:* Siemens MCC's, Siemens S7 and instruments from various suppliers
- Customer:* Siemens (SA) PT&D  
*Date:* 2008 - 2009  
*Description:* Acting Engineering Manager, MV Switchgear  
*Scope:* Manage Electrical Design Office. Approve electrical protection and control circuit designs. Assist with adopting new standards. Implementing Elcad draughting package and new standards. Implementing SAP system. Provide on the job training.  
*Equipment:* Various manufacturers.
- End customer:* Eskom - Arnot Power station  
*Customer:* ABB (Services)  
*Date:* 2008  
*Description:* Consult and assist with maintenance functions on steam boiler and turbine process control system (PROCONTROL)  
*Scope:* Provide specialist support to C&I maintenance department w.r.t. maintenance issues on the process control system, provide on the job training. Implement process control and SCADA modifications.  
*Equipment:* ABB PROCONTROL (P13 & P14)
- End customer:* PetroNet  
*Customer:* Siemens  
*Date:* 2006 - 2007  
*Description:* Various MV and LV electrical designs for Telecontrol Upgrade Phase II  
*Scope:* Do electrical designs, plan site implementation and change over processes. Commissioning of all electrical equipment in a petrochemical environment  
*Equipment:* Various but the majority is manufactured by Siemens.

- *Customer:* Kelvin Power  
*Description:* Design and draughting services  
*Date:* 2006 - 2011  
*Scope:* Create schematic drawings for new generator protection, AVR and motor protection schemes. Also assisted the C&I team in creating drawings for upgrades on the soot blowing system.  
*Equipment:* SEL, Basler
- *End customer:* TATA Steel  
*Customer:* Siemens  
*Date:* 2006  
*Description:* Designs protection and control circuits for MV switchgear.  
*Scope:* Design and draw protection and control circuits for 33kV GIS and 11kV AIS switchgear  
*Equipment:* Siemens
- *End customer:* Impala Plats (Mineral process – 33kV Furnace)  
*Customer:* Marqott  
*Date:* 2006  
*Description:* Design and produce schematic drawings for electrical protection and control circuits on 33kV air insulated switchgear  
*Equipment:* ABB, Alstom
- Various other protection and control circuit designs for MV switchgear on behalf of Marqott
- *End customer:* Metro Rail  
*Customer:* ABB  
*Date:* 2006  
*Description:* Engineering design, test and commissioning.  
*Scope:* Producing cable schedules, updating drawings, do modifications on site, test and commissioning of new 22/6.6kV incomer at Alliance substation.  
*Equipment:* ABB, Alstom
- *End customer:* Eskom – Matla power station  
*Customer:* ABB  
*Date:* 2006  
*Description:* Installation and designs  
*Scope:* Install new generator protection panels (Unit 3), assist with generator protection designs with regards to plant interface.  
*Equipment:* ABB
- *End customer:* Kelvin Power  
*Customer:* Pangaea  
*Date:* 2006  
*Description:* Electrical maintenance consultant – power station.  
*Scope:* Assist with electrical maintenance issues, training, managed transformer restoration project and assisted with budget forecasts  
*Equipment:* Various e.g. motors, transformers, protection schemes, etc.

- End customer:* AngloGold Ashanti  
*Customer:* VAMP Solutions  
*Date:* 2005, 2006  
*Description:* Installation of ARC protection equipment on main MV switchgear.  
*Scope:* Managed and supervised the project for the installation of ARC protection equipment on the main medium voltage switchgear boards at various shafts and gold plants.  
*Equipment:* VAMP
- End customer:* Anglo Coal (Isibonelo and Kriel South Collieries Secunda)  
*Customer:* VAMP Solutions  
*Date:* 2005  
*Description:* Audit commissioning of substation protection  
*Scope:* Audit and witness the commissioning of the 132/22kV substation, commissioning 132kV distance protection on OHL.  
*Equipment:* ABB, SEL, Alstom
- End customer:* SASOL coal (Sigma and Mooifontein Collieries– Sasolburg)  
*Customer:* VAMP Solutions  
*Date:* 2005  
*Description:* Refurbishment of protection relays  
*Scope:* Design, procurement, supervising installation of new protection systems on main medium voltage switchgear board. Testing and commissioning of refurbished equipment.  
*Equipment:* VAMP
- End customer:* City of Tshwane (electricity department)  
*Customer:* ABB  
*Date:* 2005  
*Description:* Installation of ARC protection system  
*Scope:* Installation of ARC protection equipment on 11kV switchgear at Mamelodi 1, 2 & 3 substations.  
*Equipment:* ABB
- End customer:* Langer Heinrich Uranium (Namibia)  
*Customer:* Uptime power  
*Date:* 2005  
*Description:* Design standby plant (diesel generator) interface and control sequences.  
*Scope:* Consult and design new standby plant with regards to interface and control sequences, including low voltage switchgear board, synchronizing and interlocking circuits.  
*Equipment:* IntelliSys controller
- Customer:* Uptime power  
*Description:* Create standard drawings for different generator control circuits  
*Date:* 2005  
*Scope:* Create drawing standards as well as standard control circuit drawings for different applications.  
*Equipment:* Various generator control systems e.g. Deep Sea

- *End customer:* Eskom (Camden power station)  
*Customer:* ABB  
*Date:* 2004, 2005  
*Description:* Commissioning of ARC protection system  
*Scope:* Commissioning of internal ARC protection system on Medium Voltage unit boards and station boards  
*Equipment:* ABB
- *End customer:* SASOL Synfuels (Secunda)  
*Customer:* ABB/RBF Technologies  
*Date:* 2004  
*Description:* Install ARC protection  
*Scope:* Installation of ARC protection system on 11kV Natus switchgear panels and busbar arrangement.  
*Equipment:* ABB
- *End customer:* Consol Glass (Wadeville)  
*Customer:* LJ Technologies and Safronics  
*Date:* 2003  
*Description:* Supply heater control for new production line  
*Scope:* Detailed engineering design for heater controllers, variable speed drives and PLC interface. CAD drawings and documentation.  
*Equipment:* Safronics and Siemens S7 PLC's
- *End customer:* Iscor (Vanderbijlpark)  
*Customer:* LJ Technologies, RBF Technologies and Geecom  
*Date:* 2003  
*Description:* Refurbishment of the Sinter plant  
*Scope:* Detailed engineering design of motor control center (MCC) and PLC interface, supplied CAD drawings and documentation.  
*Equipment:* Rockwell (Allen Bradley)
- *End customer:* Anglo Platinum (Mortimer mine)  
*Customer:* Dynamic instruments  
*Date:* 2003  
*Description:* Refurbishment of floatation plant  
*Scope:* Detailed engineering design of 500V MCC with PLC interface. CAD drawings and documentation.
- *End customer:* Portnet (Saldanha)  
*Customer:* Dynamic instruments  
*Date:* 2003  
*Description:* Extension of bulk handling plant – Stacker/reclaimers and Wagon offloading system.  
*Scope:* Consulting (electrical distribution). Detailed engineering design of MV switchgear, LV switchgear and PLC interface, Junction boxes (electrical reticulation). CAD drawings and documentation.  
*Equipment:* Alstom, ABB and various others

In addition to the projects mentioned above, we have also completed a number of other design and drafting projects. Detail of these projects is available on request.